

1. AYURVED SAMHITA & SIDDHANT

**Theory- 400 marks(100 Each)
Practical and Viva-Voce - 100 marks**

PAPER –I Charak Samhita

1. Charak Samhita complete with Ayurved Dipika commentary by Chakrapani.
2. Introductory information regarding all available commentaries on Charak Samhita

PAPER –II Sushrut Samhita & Ashtang-Hridayam

1. Sushrut Samhita Sutra sthana and Sharir- sthana. with Nibandha Samgraha commentary by Acharya Dalhana.
2. Ashtang-Hridayam Sutra Sthanamatram with Sarvanga Sundara commentary by Arun Dutt.
3. Introductory information regarding all available commentaries on Sushrut Samhita and Ashtang Hridaya.

PAPER – III Ayurvediya and Darshanika Siddhanta

Introduction and description of philosophical principles incorporated in Charak Samhita, Sushrut Samhita, Ashtanga Hridya, shtang Samgraha.

1. Analysis of principles specially loka-purusha samya, Shadpadartha, Praman, Srishti Utpatti, Panchmahabhuta, Pilupaka, Pitharpaka Karana- Karyavada, Tantrayukti, Nyayas (Maxims), Atmatatva siddhant.
2. Importance of Satkaryavad, Arambhavada, Parmanuvada Swabhavoparamvada, Swabhava Vada, Yadricha Vada, Karmvada.
3. Practical applicability principles of Samkhya- Yoga, Nyaya-Vaisheshika, Vedanta and Mimansa.

PAPER – IV Ayurved Itihas and Prayogika Siddhant.

1. Post independent Development of Ayurveda: Education, Research.
2. Globalisation of Ayurved.
3. Introduction of department of AYUSH, CCIM, CCRAS, RAV.
4. Tridosh Siddhant.
5. Panchabhautik Siddhant
6. Manastatva and its Chikitsa Siddhant.
7. Naishthiki Chikitsa.
8. Practical applicability principles of Charvak, Jain & Bauddha Darshana.
9. Journals, types of Journals review of Articles.

Practical- Viva-voce

(50 case sheets are to be filled from samhita siddhant IPD / OPD)

- 100 Marks

Reference Books

1. Charak Samhita with Chakrapani commentary.
2. Sushruta Samhita with Dalhana Commentary.
3. Ashtanga Samgraha with Sarvangasundara.
4. Ashtanga Hridaya with Sarvangasundara.
5. Vaisheshika Darshan – Prashastapada Bhasya
6. Nyaya Darshan - Vatsyayan Bhasya Patanjala
7. Yoga Darshan- Vyas Bhasya
8. Vedantsara
9. Sarvadarshan Samgraha
10. Bhartiya Darshan - Baldev Upadhyaya.
11. Ayurved Darshanam - Acharya Rajkumar Jain.
12. Ayurved Darshan Vimarsha- Dr O.P. Upadhyay.

13. Ayurvediy Jeevak Su -Dr O.P. Upadhyay.
 14. Padartha Vidnyan - Dr O.P. Upadhyay.
 15. Scientific Exploration of Ayurved – Dr. Sudhir Kumar.

2. AYURVEDA SAMHITA & SIDHANTA (Basic Principles)

Astanga Hridaya, Charaka (P,U), Padartha Vignana & Ayurveda Ithihasa, Sanskrit

1	Dr. B. P. Pandey	Group leader	
2	Dr. Mahesh Vyas	Coordinator -	Coordinator -
3	Dr. B. L. Gaur	Samhitha & Siddantha U.G. & P.G.	
4	Dr. O. P. Upadhyaya	Samhitha & Siddantha U.G. & P.G.	
5	Dr. H. P. Sharma	Samhitha & Siddantha U.G. & P.G.	
6	Dr.S.L.Sharma	Samhitha & Siddantha U.G. & P.G.	
7	Dr. R. D. Thakkur	Samhitha & Siddantha U.G. & P.G.	
8	Dr. Naresh Sharma	Samhitha & Siddantha U.G. & P.G.	
9	Dr. Yogita Jamadade	Samhitha & Siddantha U.G. & P.G.	
10	Dr. Abichal C.	Samhitha & Siddantha U.G. & P.G.	
11	Dr. Mohan Joshi	Samhitha & Siddantha U.G. & P.G.	
12	Dr. G. P. Rama Reddy	Padartha Vigyana & Ayurveda Ithihasa	Coordinator -
13	Dr. Brij Kumar Dwivedi	Padartha Vigyana & Ayurveda Ithihasa	
14	Dr. Milind Mokashi	Padartha Vigyana & Ayurveda Ithihasa	
15	Dr. Santhosh Nair	Padartha Vigyana & Ayurveda Ithihasa	
16	Dr. Ahalya Sharma	Padartha Vigyana & Ayurveda Ithihasa	
17	Dr. Suhag Rawal	Padartha Vigyana & Ayurveda Ithihasa	
18	Dr. G.R.R Chakravarthy	Padartha Vigyana & Ayurveda Ithihasa	
19	Dr. Nandani	Padartha Vigyana & Ayurveda Ithihasa	
20	Dr. Manoj Sharma	Padartha Vigyana & Ayurveda Ithihasa	
21	Dr. Mallika K. J.	Padartha Vigyana & Ayurveda Ithihasa	
22	Dr. Shubhangi K	Padartha Vigyana & Ayurveda Ithihasa	
23	Dr. Premchand Shastri	Sanskrit	Coordinator
24	Dr. Mohan Chand Bhat	Sanskrit	
25	P. V. Thothadrinathan	Sanskrit	
26	Dr. Nigam Sharma	Sanskrit	
27	Dr. Savitri G.S	Sanskrit	
28	Dr. B.K. Shyam Raw	Sanskrit	

2. RACHANA SHAARIRA

Total Marks – 400

PAPER-I (GARBHA SHAARIRA)

100 Marks

1. Etymology of Garbhavakranti Shaarira, features of Shukra and Shonita, description of Beeja, Beejbhaga, Beejbhagavyava and Garbhotpadakabhava, Garbha Poshana Krama, Garbhavridhikar Bhav, Masanumashiki Garbhavridhi, Foetal circulation. Explanation of lakshana occurring in Ritumati, Sadhyah Grihita Garbha. Yamal garbha, Anasthi garbha.
2. Explanation of Basic Embryology, and Systemic embryology.
3. Knowledge of basic facts in advancement in Anuvanshiki (Genetics) and Garbhajavikara (Teratology).

PAPER –II (KOSHTHANGA SIRA DHAMANI SROTAS SHAARIR)

100 Marks

- 1) **Koshthanga Shaarira:** - Detail etymological derivation of 'Koshtha' and Koshthanga, including detail study of structure of each Koshthanga. Male and Female genital organs.
- 2) **Ashaya:** - Definition, detail description.
- 3) **Kala Shaarira:**-Etymology, Definition, description of Seven Kala with their Modern component and applied aspects.
- 4) **Paribhashika Shaarira:** - Snayu, Kandara, Rajju, Sanghata, Jalaetc. and their general description.
- 5) **Sira, Dhamani and Srotas Shaarira:** - Etymological derivation, definitions, synonyms, number and types of Sira, Dhamani and Srotas, anatomical differences among Sira, Dhamani and Srotas, description of Vedhya and AvedhyaSira (Puncturable and Non puncturable Veins) and clinical importance of Sira, Dhamani and Srotas including Modern Anatomical counterparts.

PAPER –III (Marma Shaarira Evum Asthi Sandhi Peshee Shaarira)

100 Marks

- 1) **Marma Shaarira:** - Derivation and definitions of the term Marma and their features, characteristics and number of Marma according to Sushruta Divisions of Marma on morphological basis (Rachana Bheda), Shadangatvam (Regional), Abhighataja (Prognostic) classification, Trimarma according to Charaka. Knowledge of 'Marmaabhighata', MarmaViddha, Detailed study of individual marma with their clinical and Surgical importance. Importance of Marma in Shalyatantra.
- 2) **Asthi Shaarira :-** General introduction and description of Asthi, differences among number of Asthi.Types of Asthi. Detail study of each bone with its ossification &Applied anatomy.
- 3) **Sandhi Shaarira :-** Etymological derivation,description, features, number, types and Applied anatomy of all Sandhi (joints).
- 4) **Peshee Shaarira :-** Etymological derivation,description, features, number, types and Applied anatomy of all Peshee (Muscles).

PAPER – IV (Tantra Shaarira Evum Antah and BahihGranthi Vigyaniya)

100 Marks

1. Description of Panchgyanendriya – Ayurved and Modern aspects. (Sensory organs (Eye, Ear, Nose, Tongue and Skin with their Applied anatomy).

2. Shat Chakra - Location and significance in Yoga. Description of Ida, Pingala, Sushumnanadi.
3. Anatomy of brain and spinal cord, Peripheral nervous system (explanation of Nerve Plexuses and peripheral nerves, Cranial nerves and Autonomic nervous system, Cerebro-spinal fluid, Venous sinuses of Brain, Ventricular system of Brain, Blood supply of Brain, Meninges with Applied Anatomy).
4. AntahSraviGranthi and BahihSraviGranthi:-Detail study of Exocrine & Endocrine glands.

PRACTICAL:-

- 1) Dissection of atleast one cadaver during the Final part of the course.
- 2) Training of preservation techniques in the Embalming room.
- 3) Preparation of Soft tissue specimen and Models using current technology like Plastination, Lumen casting etc. under the guidance of Teaching staff and Experts of the relevant fields.
- 4) Preparation of Charts and Models of Rachana Shaarira subject to the individual capacity.
- 5) Observation of MRI, CT Scan, USG procedures, Colour Doppler etc.
- 6) Visits to various Museums of other colleges in the Medical field.
- 7) Observation of Ward procedures like Lumbar puncture, Tracheostomy, Abdominal parentesis, Liver biopsy, Venesection, etc. (subject to the availability and opportunities)

Pattern of Practical Examination

- | | |
|---|------------|
| 1. Practical record book & log book | - 20 Marks |
| 2. Spotting (Dissected organs and Bones-Joints-Muscles) | - 20 Marks |
| 3. Dissection | - 40 Marks |
| 4. Surface & Radiological Anatomy | - 40 Marks |
| 5. Dissertation Presentation | - 10 Marks |
| 6. Teaching Skills | - 20 Marks |
| 7. Viva-voce | - 50 Marks |

Reference Books-

- | | |
|--|---------------------------|
| 1. Relevant matters of Brihatrayee and Laghutrayee | |
| 2. PratyakshaShariram | - GananathSen |
| 3. AbhinavaShariram | - Damodar Sharma Gaur |
| 4. Parishadyam Sabdartha Shariram | - Damodara Sharma Gaur |
| 5. BrihatShariram | - P S Varier |
| 6. Shiva Samhita | |
| 7. Gray's Anatomy | - Latest Edition |
| 8. Human Anatomy | - B D Chaurasia |
| 9. Cunnigham's Companion to Manual of Practical Anatomy. Vol I, II & III | |
| 10. Developing Human | - Keith L Moore & Persaud |
| 11. Clinically oriented Anatomy | - Keith L Moore |
| 12. Clinically oriented Neuro Anatomy | - Richard Snell |
| 13. Surface and Radiological Anatomy | - Halim |
| 14. Grant's Methods of Anatomy | - Grant |
| 15. Grant's dissector | - Grant |
| 16. Human Embryology | - I. B. Singh |

3. KRIYA SHARIR

Paper- I (Dosa-Dhātu-Mala Vijñāna)

Contribution of different Ayurveda Samhita in Kriya Sharir

- Theory of Pancamahābhūta
- Principle of Loka-Purusa Sāmya
- Importance of Sāmānya - Viśesa principle.
- Different views on the composition of Purusa and the importance of Cikitsya Purusa.
- Importance of Gurvādi Guna in Ayurveda.
- General description of Tridosā theory
- Mutual relationship between Triguna-Tridosā-Pancamahābhūta-Indriya.
- Mutual relationship between Rtu-Dosa-Rasa-Guna.
- Biological rhythms of Tridosā on the basis of Day-Night-Age-Season and Food intake.
- Role of Dosa in the formation of Prakṛti of an individual.
- Role of Dosa in maintaining health.
- **Vāta Dosa:** General locations (*Sthāna*), general attributes (*Guna*) and general functions (*Sāmānya Karma*). Five subdivisions of *Vāta* with their specific locations, specific properties, and specific functions (*Prāna, Udāna, Samāna, Vyāna, Apāna*)
- **Pitta Dosa:** General locations (*Sthāna*), general attributes (*Guna*) and general functions (*Sāmānya Karma*). Five subdivisions of *Pitta* with their specific locations, specific properties, and specific functions (*Pācaka, Ranjaka, Ālocaka, Bhrājaka, Sādhaka*). Similarities and differences between *Agni* and *Pitta*.
- **Kapha Dosa:** General locations (*Sthāna*), general attributes (*Guna*) and general functions (*Karma*) of *Kapha*. Five subdivisions of *Kapha* with their specific locations, specific properties, and specific functions (*Bodhaka, Avalambaka, Kledaka, Tarpaka, Ślesaka*).
- Applied physiology of Tridosā principle: *Kriyākāla, Dosa Vrddhi-Dosa Ksaya*.
- **Dhātu Posana:** Process of nourishment of *Dhātu*. Description of various theories of *Dhātu Posana* (*Ksīra-Dadhi, Kedāri-Kulya, Khale Kapota* etc).
- *Dhātu:* General introduction and definition of *Dhātu*. Formation, Definition (*Nirukti*), Distribution, Attributes, quantity, classification, *Pāñcabhautika* composition and Functions of all seven *Dhātus* in detail: *Rasa, Rakta, Māmsa, Meda, Asthi, Majjā, Śukra*.
- Applied physiology of *Dhātu:* Manifestations of *Ksaya* and *Vriddhi* of each *Dhātu*. Description of *Dhātu Pradosaja Vikāra*.
- Description of *Āśraya* and *Āśrayī* kind of relationship between *Dosa* and *Dhātu*.
- Description of the characteristic features of *Astavidha Sāra*. Description of *Rasavaha, Raktavaha, Māmsavaha, Medovaha, Asthivaha, Majjāvaha* and *Śukravaha Srotāmsi*.
- **Ojas:** Definition, locations, synonyms, Formation, Distribution, Properties, Quantity, Classification and Functions of *Ojas*. Description of *Vyādhiksamitva. Bala Vrddhikara Bhāva*. Classification of *Bala*. Relation between *Ślesmā, Bala* and *Ojas*.
- Applied physiology of *Ojas:* Etiological factors and manifestations of *Ojaksaya, Visramsā* and *Vyāpat*. Physiological and clinical significance of *Ojas*.
- **Upadhātu:** General introduction and Definition of the term 'Upadhātu'. Formation, Nourishment, Quantity, Properties, Distribution and functions of each *Upadhātu*.
- **Stanya:** Characteristic features and methods of assessing *Śuddha* and *Dūsita Stanya*, Manifestations of *Vrddhi* and *Ksaya* of *Stanya*.

- **Ārtava:** Characteristic features of Śuddha and Dūsita Ārtava. Differences between Raja and Ārtava, physiology of Ārtavavaha Srotāmsi.
- Study of Tvak
- **Physiology of Mala** - Definition of the term 'Mala'. Definition, Formation, Properties, Quantity and Functions of Purīsa, Mutra. Manifestations of Vrddhi and Kshaya of Purīsa and Mūtra.
- **Sveda** – Definition, Formation, Properties, Quantity and Functions of Svedavaha Srotāmsi. Formation of Sveda. Manifestations of Vrddhi and Kshaya of Sveda.
- **Dhātumala** – Definition, Formation, properties, Quantity, Classification and Functions of each Dhātumala .

Paper-II - Prakrti- Sattva Vijñāna

- **Deha-Prakrti:** Various definitions and synonyms for the term 'Prakrti'. Factors influencing the Prakrti. Classification of Deha-Prakrti. Characteristic features of the individuals belonging to each kind of Deha-Prakrti. Recent advances in understanding the Prakrti.
- **Pancajnanendriya:** Physiological description of Pancajnanendriya and physiology of perception of Śabda, Sparśa, Rūpa, Rasa, Gandha. Indriya-panca-pancaka; Physiological description of Karmendriya.
- **Manas** – Definition, location (sthana), Properties, Functions and Objects of Manas.
- **Ātmā** – Definition, Properties of Ātmā. Difference between Paramātmā and Jīvātmā; Characteristic features of Ātmā.
- **Buddhi** – Location, Types, Functions of Buddhi; Physiology of Dhī, Dhrti and Smrti.
- **Nidrā** – Definition of Nidrā, Classification of Nidrā. Tandra, physiological and clinical significance of Nidra; Svapnotpatti and Svapnabheda.
- Physiology of special senses. Intelligence, Memory, Learning and Motivation.
- Physiology of sleep.
- Physiology of speech and articulation;
- Physiology of Pain and temperature.

Paper-III - Kosthanga Kriya Vijñāna

- **Āhāra:** Definition and significance of Āhāra. Classification of Āhāra. Āhāra-vidhi-vidhāna. Asta āhāra-vidhi viśesāyatana, Āhāraparināmakara bhāva.
- **Āhārpāchana:** Āhāra Pāka Prakriyā, Description of Annavaha Srotās. Description of Avasthāpāka and Nishthapāka. Role of dosha in Āhārapāka. Sāra and Kitta Vibhajana. Absorption of Sāra. Utpatti and Udieeran of Vāta-Pitta-Kapha.
- Definition of the term Kostha. Physiological classification of Kostha and the characteristics of each kind of Kostha.
- **Agni:** Description of the importance of Agni. Classification of Agni. Locations, properties and functions of Jātharāgni, Bhūtāgni, and Dhātvagni.
- Applied physiology of Agni in Kriyā Śārīra and Cikitsā.
- Description of the aetiology and features of Annavaha Srotodusti. Applied physiology of Annavaha Srotās: Arocaka, Ajīrna, Atīsāra, Grahanī, Chardi, Parināma Śūla Agnimāndya.
- Description of the process of digestion of fats, carbohydrates and proteins in human gastrointestinal tract. Different digestive juices, their enzymes and their mechanisms of action. Functions of Salivary glands, Stomach, Pancreas, Small intestine, Liver and large intestine in the process of digestion and absorption.

- Movements of the gut (deglutition, peristalsis, defecation etc.) and their control. Role of neuro-endocrine mechanisms in the process of digestion and absorption. Enteric nervous system.
- Applied physiology of gastrointestinal tract: Vomiting, Diarrhoea, Malabsorption etc.
- Recent understandings related to the gut microbiota and their role in health and disease.
- Introduction to biochemical structure, properties and classification of proteins, fats and carbohydrates.
- Description of the processes involved in the metabolism of proteins, fats and carbohydrates.
- Vitamins: sources, daily requirement and functions. Physiological basis of signs and symptoms of hypo and hyper-vitaminosis.

Paper-IV - Modern Physiology and its applied aspect

Physiology of Neuro-Immune-Endocrine Mechanisms:

- Physiology of Nervous System. General introduction to nervous system: neurons, mechanism of propagation of nerve impulse.
- Study of CNS, PNS and ANS. Sensory and motor functions of nervous system. Functions of different parts of brain and spinal cord, Hypothalamus and limbic system
- Physiology of Endocrine system. Classification and characteristics of different hormones. Description of hormones secreted by Hypothalamus, Pituitary gland, Thyroid gland, Parathyroid glands, Pancreas, Adrenal glands and their physiological effects. Effects of hypo and hyper-secretion of various hormones.
- Male and female reproductive physiology. Spermatogenesis and oogenesis. Hormonal regulation of uterine and ovarian cycles. Physiology of pregnancy and lactation. Parturition.
- Adipose tissue and its Function. Circulating lipids. Description of lipoproteins like VLDL, LDL and HDL and their composition.
- Physiology of immune system. Definition and classification of immunity: Innate, acquired and artificial. Mechanisms involved in humoral and cell mediated immunity.

Cardiovascular physiology, Respiratory physiology and Blood:

- Physiology of Cardio-Vascular system: Functional anatomy of cardiovascular system. Cardiac cycle. Heart sounds. Regulation of cardiac output and venous return. Physiological basis of ECG. Heart-rate and its regulation. Arterial pulse. Systemic arterial blood pressure and its control. Regional circulations. Physiology of lymphatic circulation.
- Physiology of Respiratory system: Functional anatomy of respiratory system. Ventilation. Mechanism of respiration. Exchange and transportation of gases. Neural and chemical control of respiration. Spirometry and lung function tests. Artificial respiration.
- Functions of Haemopoietic system: Composition and functions of blood and blood cells. Haemopoiesis- (stages and development of RBCs, WBCs and platelets); Introduction to bone marrow: composition and functions of bone marrow. Structure and functions of haemoglobin, mechanism of blood clotting, study of platelets. physiological basis of blood groups. Principles of blood transfusion, plasma proteins-synthesis and functions. Applied physiology: Anaemia, Jaundice.

Musculoskeletal Physiology:

- Physiology of muscles. Classification of muscles. Electrical and mechanical properties of Cardiac, skeletal and smooth muscles.

Physiology of Excretion:

- Physiology of excretion. Functional anatomy of urinary tract. Functions of kidneys. Mechanism of formation of urine. Control of micturition. Renal function tests.
- Structure and functions of skin, sweat glands and sebaceous glands.

Learners should be well versed with the following instruments-

- Physiograph, Computerised spirometry, Biochemical Analyzer, Pulse oxymeter, Elisa Reader, Hematology Analyzer, Tread mill

Bridge areas including recent advances:

- Recent studies in biorhythms.
- Recent advances in Neuro-Immune-Endocrine physiology.
- Recent advances in stem cell research

PRACTICAL**Ayurvedic practicals**

- Assessment of Prakrti
- Assessment of Sāra
- Assessment of Dosa Vrddhi Ksaya Laksana
- Assessment of Dhātu Vrddhi – Ksaya Laksana
- Assessment of Agni
- Assessment of Kostha
- Assessment of Śarīra Bala through Vyāyāma Śakti
- Mūtra Parīksa
- Nādī Parīksā
- Anguli Pramāna
- Assessment of Sātmya

Hematology

- Use and care of Compound microscope
- Histological study of different organs
- Hemoglobin estimation
- Total RBC count
- Total WBC count
- Differential leukocyte count
- Packed cell volume (PCV)
- ESR
- Bleeding time
- Clotting time
- Blood grouping and Rh typing

Urine examination**Physical examination**

- Specific gravity and reaction of urine
- Detecting the presence of Albumin in urine

- Detecting the presence of Sugar in urine
- Detecting the presence of Ketone bodies in urine
- Detecting the presence of Bile salts and bile pigments in urine

Cardio-Vascular system

- Clinical methods of examining cardiovascular system
- Examination of Arterial Pulse
- Arterial blood pressure measurement: Effect of posture, exercise and cold pressor test on Blood Pressure
- ECG recording and its interpretation
- Heart Sounds

Respiratory system

- Clinical examination of Respiratory System
- Lung Function Tests including Spirometry

Nervous System

- Clinical examination of nervous system
- Examination of higher mental functions
- Examination of cranial nerves
- Examination of reflexes
- Examination of sensory functions
- Examination of motor functions
- Examination of Autonomic Nervous System
- EEG recording (Demonstration)

Reference Books

- | | |
|--|-------------------------------|
| • Ayurvediya Kriyasharir | - Ranjit rai Desai |
| • Kayachikitsa Parichaya | - C. Dwarikanath |
| • Prakrit Agni Vigyan | - C. Dwarikanath |
| • Sharir Kriya Vigyan | - Shiv Charan Dhyani |
| • Abhinava Sharir Kriya Vigyana | - Acharya Priyavrata Sharma |
| • Dosha Dhatu Mala Vigyana | - Shankar Gangadhar Vaidya |
| • Prakrita Dosha Vigyana | - Acharya Niranjana Dev |
| • Tridosha Vigyana | - Shri Upendranath Das |
| • Sharira Tatva Darshana | - Hirlekar Shastri |
| • Prakrita Agni Vigyana | - Niranjana Dev |
| • Deha Dhatvagni Vigyana | - Vd. Pt. Haridatt Shastri |
| • Sharir Kriya Vigyana (Part 1-2) | - Acharya Purnchandra Jain |
| • Sharir Kriya Vigyana | - Shri Moreswar Dutt. Vd. |
| • Sharira Kriya Vijnana (Part 1 and 2) | - Nandini Dhargalkar |
| • Dosha Dhatu Mala Vigyana | - Basant Kumar Shrimal |
| • Abhinava Sharir Kriya Vigyana | - Dr. Shiv Kumar Gaur |
| • Pragyogik Kriya Sharir | - Acharya P.C. Jain |
| • Kaya Chikitsa Parichaya | - Dr. C. Dwarkanath |
| • Concept of Agni | - Vd. Bhagwan Das |
| • Purush Vichaya | - Acharya V.J. Thakar |
| • Kriya Sharir | - Prof. Yogesh Chandra Mishra |

- Sharir Kriya Vigyana - Prof. Jayaram Yadav & Dr. Sunil Verma.
- Basic Principles of Kriya-Sharir (A treatise on Ayurvedic Physiology) - Dr. Srikant Kumar Panda
- Sharir Kriya – Part I & Part II – Dr. Ranade, Dr. Deshpande & Dr. Chobhe
- Human Physiology in Ayurveda - Dr Kishor Patwardhan
- Sharirkriya Vignyan Practical Hand Book – Dr. Ranade, Dr. Chobhe, Dr. Deshpande
- Sharir Kriya Part 1 – Dr. R.R. Deshpande, Dr. Wavhal
- Sharir Kriya Part 2 – Dr. R.R. Deshpande, Dr. Wavhal
- Textbook of Physiology - Gytton & Hall
- Review of medical physiology – William Ganong
- Essentials Of Medical Physiology - Sembulingam, K.
- Concise Medical Physiology - Chaudhari, Sujit. K.
- Fundamental of Anatomy & Physiology - Martini
- Principals of Anatomy & Physiology - Tortora & Grabowski
- Human Physiology - Richards, Pocock
- Samson Wrights Applied Physiology, Keele, Neil, Joels
- Brainstem Control of Wakefulness And Sleep- Steriade, Mirce
- An Introduction to Human Physiology - Green, J.h.
- Ancient Indian Medicine - Kutumbiah P.
- Biographical History of Indian Medicine - Srikanthamurthy KR
- Ayurveda Kriya Sharira - Yogesh Chandra Mishra
- Textbook of Medical Physiology - Indu Khurana
- Tridosha Theory - Subrahmanya Shastri
- Statistics in Medicine - K. Syamalan

Important journals to refer:

1. Advances in Physiology Education
2. Academic Medicine
3. Indian journal of Physiology and Pharmacology
4. Journal of Ayurveda and Integrative Medicine
5. Evidence-based Complementary and Alternative Medicine
6. AYU
7. All journals of American Physiological Society
8. Journal of Physiology

Important research papers to refer:

1. Hong KW, Oh B. Overview of personalized medicine in the disease genomic era. *BMB Rep.* 2010 Oct;43(10):643-8.
2. Prasher B, Negi S, Aggarwal S, Mandal AK, Sethi TP, Deshmukh SR, Purohit SG, Sengupta S, Khanna S, Mohammad F, Garg G, Brahmachari SK; Indian Genome Variation Consortium, Mukerji M. Whole genome expression and biochemical correlates of extreme constitutional types defined in Ayurveda. *J Transl Med.* 2008 Sep 9;6:48.
3. Patwardhan B, Bodeker G. Ayurvedic genomics: establishing a genetic basis for mind-body typologies. *J Altern Complement Med.* 2008 Jun;14(5):571-6. Review. PubMed PMID: 18564959.

4. Bhushan P, Kalpana J, Arvind C. Classification of human population based on HLA gene polymorphism and the concept of Prakriti in Ayurveda. *J Altern Complement Med.* 2005 Apr;11(2):349-53.
5. Ghodke Y, Joshi K, Patwardhan B. Traditional Medicine to Modern Pharmacogenomics: Ayurveda Prakriti Type and CYP2C19 Gene Polymorphism Associated with the Metabolic Variability. *Evid Based Complement Alternat Med.* 2009 Dec 16. [Epub ahead of print]
6. Aggarwal S, Negi S, Jha P, Singh PK, Stobdan T, Pasha MA, Ghosh S, Agrawal A; Indian Genome Variation Consortium, Prasher B, Mukerji M. EGLN1 involvement in high-altitude adaptation revealed through genetic analysis of extreme constitution types defined in Ayurveda. *Proc Natl Acad Sci U S A.* 2010 Nov 2;107(44):18961-6. Epub 2010 Oct 18.
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4. DRAVYAGUNA VIGYAN

PAPER-I Namarupa Vigyana

100 marks

1. Importance of Namagyana of Dravya, origin of Namarupagyana of Aushadhi in Veda, etymological derivation of various names and synonyms of Aushadhi.
2. Rupagyana in relation to Aushadhi. Sthula and Sukshma description (Macroscopic and Microscopic study) of different parts of the plant.
3. Synonyms of dravyas(aushadha and Ahara) mentioned in Vedic compendia, Brihatrayee, Bhavaprakasha and Rajanighantu.
4. Basonyms, synonyms and distinguish morphological characteristic features of medicinal plants listed in Ayurvedic Pharmacopoeia of India(API).
5. Knowledge of Anukta dravya (Extrapharmacopial drugs)with regards to namarupa.
6. Sandigdha dravya(Controversial drugs) vinischaya.
7. Knowledge of biodiversity, endangered medicinal species.
8. Knowledge of TKDL, Introduction to relevant portions of Drugs and cosmetic act, Magic remedies Act, Intellectual Property Right (IPR) and Regulations pertaining to Import and Export of Ayurvedic drugs.
09. Knowledge of tissue culture techniques
10. Knowledge of Genetically Modified Plants

PAPER –II Guna Karma Vigyan

100 marks

1. Fundamental principles of drug action in Ayurveda and conventional medicine.
2. Detailed study of rasa-guna- virya- vipaka-prabhava and karma with their applied aspects and commentators (Chakrapanidatta, Dalhana, Arunadatta, Hemadri and Indu) views on them.
3. Comprehensive study of karma as defined in Brihatrayee & Laghutrayee
4. Detailed study of Guna and Karma of dravyas listed in API and Bhavaprakasha Nighantu along with current research review.
5. Detailed study of aharadravya/ ahara varga ascribed in Brihatrayee and various nighantus along with Kritanna varga.
6. Pharmacological principles and knowledge on drugs acting on various systems.
7. Basic knowledge on experimental pharmacology for the evaluation of - analgesic, anti pyretic, anti inflammatory, anti diabetic, anti hypertensive, hypo lipidemic, anti ulcer, cardio protective, hepatoprotective, diuretics, adaptogens, CNS activites.
8. Knowledge on Heavy metal analysis, pesticidal residue and aflatoxins
9. Knowledge on evaluation of anti microbial and antimycotic activities.

PAPER – III Prayogavigyana

Marks 100

1. Bhaishjya Prayog Siddhant [Principles of drug administration] - Bhaishajya Marga (routes of drug administration), Vividha Kalpana (Dosage forms), Principles of Yoga Vijnan(compounding), Matra (Dosage), Anupana (Vehicle), Aushadha grahankal (Time of drug administration), Sevankal avadhi (duration of drug administration), Pathyapathya (Dos' /Donts' /Contraindications), complete Prescription writing (Samagra Vyavastha patraka).
2. Samyoga- Viruddh Sidhanta and its importance
3. Amayika prayoga (therapeutic uses) of important plants ascribed in as well as Brihatrayee, Chakradutta, Yoga ratnakara and Bhavaprakasha.
4. Knowledge of Pharmaco-vigilance in Ayurveda and conventional system of medicine.

5. Knowledge of clinical pharmacology and clinical drug research as per GCP guide lines.
6. Knowledge of Pharmacogenomics

PAPER- IV

100 marks

1. Etymology of nighantu, their relevance, utility and salient features.
2. Chronological history of the following Nighantus with their authors name, period and content- Paryaya ratnamala, Dhanvantari nighantu, Hridayadipika nighantu, Ashtanga nighantu, Rajanighantu, Siddhamantra nighantu, Bhavaprakasha nighantu, Madanpala nighantu, Rajavallabha nighantu, Madhava Dravyaguna, Kaiyadeva nighantu, Shodhala nighantu, Saligram nighantu, Nighantu ratnakara, Nighantu adharsha and Priya nighantu
3. Detailed study Aushadha kalpana mentioned in Sharangadhara samhita and Ayurvedic Formulary of India (AFI).
4. General awareness on poshaka ahara(Nutraceuticals),Varnya(cosmoceuticals), food additives, Excipients etc.
5. Knowledge of plant extracts, colors, flavors and preservatives.
6. Review of important modern works on classical medicinal plants published by Govt of India, department of AYUSH and ICMR.

Syllabus of the Practical training of part two M.D. (Ayu) - Dravyaguna

Practical:-

Study tours:

Field identification of medicinal plants through at least three local Dravyaguna study tours within the state and one study tour out of state. Preparation of minimum 50 herbarium sheets, along with raw drug either from field, of plants be collected during study tours.

1. Evaluation of Crude drugs:

Macro and microscopic methods of examining five drugs of each of different useful parts of plants, including their powders.

2. Phytochemical evaluation of raw material:

Quantitative standards like foreign matter, extractive (water and alcohol), ash value, acid insoluble ash and TLC separation of various parts of minimum two plants of Ayurvedic Pharmacopoeia of India.

3. Yoga vijnana :

Preparation of two yoga of each kalpana of Ayurvedic Formulary of India:

4. Pharmacology:

- ✓ Rasa nirdharana by Taste Threshold method of minimum one drug for each of rasas.
- ✓ Observation of animal experimentation models (both in vitro and in vivo)- 05 models for possible rasadi gunas.

5. Clinical

- ✓ Regular clinical training in the hospital for submission of Single Aushadhi Prayoga (Single drug trial/ Clinico-pharmacological studies.)
- ✓ Survey for Amayika prayoga of aushadhi(Pharmaco epidemiology) for studying their role in clinical practice in contemporary period -observational study-minimum.

6. Dissertation

A Dissertation, as per the approval of Departmental Research Committee/Competent Committee for the purpose, be prepared under the guidance of approved supervisor

in Dravyaguna and submitted 6 months before the final examination. The approval of Dissertation shall be essential before appearing the final examinations.

7. Method of practical training – Posting for minimum one month in each of the following units -

- ✓ Quality control laboratory of nearest pharmacy/institution for crude drug identification, adulterants and substitutes & understanding standardization techniques.
 - ✓ Experimental pharmacology laboratory for developing skills in animal experimentation
 - ✓ Regular clinical training in the Teaching hospital for studying Ekala Aushadhi Prayoga & Adverse drug reactions(ADR).
8. Post Graduate Scholar is expected to present minimum two scientific papers in National / international seminars during the course of study
9. Post Graduate Scholar is expected to publish / get accepted at least one paper in indexed/ peer reviewed journal under the supervision of guide.

Pattern of Practical Examination-

Total =200 marks

- | | |
|--|------------|
| 1. Herbarium | - 10 Marks |
| 2. Pharmacognosy practical record | - 10 Marks |
| 3. Pharmacology practical record | - 10Marks |
| 4. Clinical records record | - 10 Marks |
| 5. Practical examination(Identification of green and raw drugs, microscopic examination, Ekala aushadha pariksha | - 60 Marks |
| 6. Thesis Presentation | - 20Marks |
| 7. Viva voce | - 80 Marks |

Reference books -

5. RASA SHASTRA AND BHAI SHAJYA KALPANA

Paper I Rasa Shastra

Part A

1. History and Chronological evolution of Rasashastra, concept of Raseshwara darshan. Fundamental Principles of Rasashastra Technical terminologies (Paribhasha) used in Rasa shastra.
2. Detailed knowledge of ancient and contemporary Yantropakarana and their accessories used in aushadhikaran and their contemporary modification such as yantras, mushas, putas, Koshtis, bhrashtis, muffle furnaces and other heating appliances, ovens, driers etc. used in manufacturing of Rasaushadhis in small scale and large scale along with their applications.
3. Study of Samskara, Role of agni (Heat), jala and other dravas (water and other processing liquids), kala (Time span), paatra (container) etc. and their significance in aushadhikarana.
4. Concept of Bhavana, study of Mardana and its significance and knowledge of ancient and contemporary grinding techniques.
5. Detailed Knowledge of different procedures of Shodhana, Jarana Murchana and Marana, concept of Puta, definition, types and specifications of different Putas. Significance of different Putas in relation to Bhasmikarana and therapeutic efficacy of dravya under process. Bhasma pariksha vidhi and its significance in relation to contemporary testing procedures. Amritikaran and Lohitikarana.
6. Detailed knowledge of Satva and Druti, Satva shodhan, mrudukaran and Maran of Satva, its significance, in relation to therapeutic efficacy of dravya under process.
7. Concept of Pratinidhi dravya and discussion on controversial drugs.

PART – B

1. Detailed ancient and contemporary knowledge of Parada and its compounds with reference to source, occurrence, physico-chemical characterization, graahya agrahyatva, Parada dosha, Parada gati, Parada shodhan, Study of Ashta sanskara, ashtadasha sanskara etc., Hingulottha Parada. Concept of Parada jaran, moorcchana, bandhan, pakshaccheda and marana etc. Therapeutic properties and uses of Parada.
2. Detailed ancient & contemporary knowledge with Geochemical / mineralogical / biological identification, source, occurrence, physico-chemical characterization, graahya-agraahyatva, Shodhan Maranadi vidhi and therapeutic properties and uses of dravyas etc. included in Maharasa, Uparasa, Sadharana rasa, Dhatu, Upadhatu, Ratna, Uparatna, Visha, Upavisha, Sudha varga, Lavana varga, Kshara varga, Sikata varga and other miscellaneous drugs used in Rasashastra.
3. Detailed knowledge of manufacturing, pharmacopeial standards, storage, shelf life, therapeutic efficacy, dose, anupana, vikarashanti upaya and development of technology with Standard Operating Procedures of processing, standardization, quality control of Bhasmas and Pishtis

Bhasma - Abhraka Bhasma, Svarnamakshika Bhasma, Kasis Bhasma, Svarna Bhasma, Rajata Bhasma, Tamra Bhasma, Loha Bhasma, Mandur Bhasma, Naga Bhasma, Vanga Bhasma, Yashad Bhasma, Trivanga Bhasma, Pittala, Kamsya and Varthaloha Bhasma, Shankha Bhasma, Shukti Bhasma, Kapardika Bhasma, Godanti Bhasma, Praval Bhasma, Mrigashringa Bhasma, Mayurpiccha Bhasma, Kukkutand twak Bhasma, Hiraka Bhasma, Manikya Bhasma.

Dravaka - Shankha Dravaka

Pishti - Praval pishti, Manikya Pishti, Mukta pishti, Jahara mohara pishti, Trinakanta mani pishti etc.

4. Detailed knowledge of manufacturing, storage, shelf life, pharmacopeial standards, therapeutic efficacy, dose, anupana and development of technology with Standard Operating Procedures of processing, standardization and quality control of Kharaliya rasa, Parpati, Kupipakva rasa and Pottali rasa.
5. Study of classical texts with respective commentaries and special emphasis on Rasarnava, Rasahridaya tantra, Rasa Ratna Samucchaya, Rasendra Chintamani, Rasendra Chudamani, Rasa Ratnakara, Rasadhyaya, Rasa Kamdhenu, Anandkanda, Siddha Bhesaja Manimala, Ayurveda Prakash, Rasatarangini, Bhaishajya Ratnavali, Rasamritam etc. and the books mentioned in the Schedule I of D & C Act – 1940. Relevant portions of Brihatrayi.

Paper II Bhaishajya Kalpana

Part A

1. History and Chronological evolution of Bhaishajya Kalpana, Concept of Bhesaja and Aushadh, fundamental principles of Bhaishajya Kalpana. Technical terminologies (Paribhasha) used in Bhaishajya Kalpana.
2. Classical and Contemporary concepts of Collection, storage, Saviryata Avadhi and preservation methods of different fresh and dry Aushadhi dravyas and their graahya agrahyatva
3. Detailed knowledge of routes of drug administration, Aushadha matra, Anupana, Sahapana, Aushadha Sevana Kala, Kala Avadhi, Pathya, Apathya (Posology).
4. Detailed knowledge of manufacturing, standardization, quality control, pharmacopeial standards, storage, shelf life and development of innovative technology with Standard manufacturing Operating Procedures of following dosage forms
 - i) Panchavidha Kashaya, Churna, Rasakriya, Ghana, Avaleha, Pramathya, Mantha, Panaka, Sarkara, Kshirapaka, Ushnodaka, Aushadha Siddha Udaka, Sadangodaka, Tandulodaka, Laksharasa, Arka, Satva, Kshara, Lavana, Masi, Gutika, Vatika, Modaka, Guggulu and Varti etc.
 - ii) Sneha Kalpana: Concept of accha sneha and sneha pravicharana and Murchhana. Sneha paka, types of sneha paka and sneha siddhi lakshana, Avartana. Sneha kalpa karmukata (Pharmacokinetics and dynamics of sneha kalpa). Role of Sneha in relation to absorption of drug.
 - iii) Kritanna and Bhesaja Siddha Anna Kalpana, Aharopayogi varga, concept of medicinal and functional food, dietary supplements and nutraceuticals etc.
 - iv) Sandhana kalpana: Madya varga and Shukta varga. Asava yoni. Alcoholic and acidic fermentation. Sandhana kalpa karmukata (Pharmacokinetics and dynamics). Advancements in fermentation technology. Knowledge of regulations in relation to alcoholic drug preparations.
 - v) Bahya Prayogarthi Kalpana : Lepa, Upanaha, Udvartan, Avachurnana / Avadhulana, Abhyanga, Dhupana, Malahara.
 - vi) Mukha, Karna, Nasa, Netropacharartha Kalpana:

- vii) Basti Kalpana: Basti Yantra Nirmana, Types of basti. Anuvasana and Asthapana basti. Karma, kala and yoga basti etc. Basti Kalpa (Madhutailika, Piccha basti etc.), Comparison of Asthapana and Anuvasana basti with evacuation and retention enema.

Part B

All the following procedures are to be studied in relevance to Ayurvedic Bhaishajya Kalpas.

1. Methods of Expression and Extraction: Maceration, percolation, distillation, infusion and decoction.
2. **Liquids:** Clarified liquid, syrup, elixir, filtration techniques
3. **Solid dosage Forms: Powders:** Size reduction, separation techniques, particle size determination, principles of mixing. **Tablets:** Methods of tableting, suppositories, pessaries and capsules, sustained release dosage forms.
4. **Semisolid dosage forms,** emulsions, suspensions, creams and ointments, sterilization of ophthalmic preparations.
5. An introduction to various cosmetic preparations.
6. Drying, open and closed air drying, freeze drying, vacuum drying and other drying methods pharmaceutical excipients.
7. Study of classical texts with special emphasis on Chakradatta, Sharangadhara Samhita, Bhaishajya Ratnavali, Bhava Prakasha, Yogaratnakara, relevant portions of Brihatrayi, Ayurvedic Pharmacopeia of India, Ayurvedic Formulary of India.

Paper III Rasa Chikitsa & Aushadha Yoga Vigyana

PART- A

1. Rasachikitsa, Kshetrikaran, Rasajirna, Lohajirna, Aushadhi Sevana Vikarashanti Upaya. Ashuddha, Apakva, Avidhi Rasadravya Sevanajanya Vikara evam Vikara shanti upaya.
2. Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas
 - i. **Kharaliya Rasa :** Shwasa kuthara Rasa, Tribhuvana kirti Rasa, Higuleshwara Rasa, Ananda bhairava Rasa, Maha Lakshmi vilasa Rasa, Vasnata kusumakara Rasa, Vasanta malti Rasa, Brihat vata chintamani Rasa, Laghu suta shekhar Rasa, Suta shekhara Rasa, Ram ban Rasa, Chandra kala Rasa, Yogendra Rasa, Hridyarnava rasa, Grahani kapata Rasa, Garbha pala Rasa, Jalodarari Rasa, Mrityunjaya Rasa, Madhumalini vasanta Rasa, Arsha kuthara Rasa, Krimi mudgara Rasa, Suchika bharana Rasa, Tri netra Rasa, Smruti sagara Rasa, Vata gajankusha Rasa, Agni kumar Rasa, Ekangavir Rasa, Kama dugha Rasa, Purna chandrodaya Rasa, Pratap lankeshwara Rasa, Maha vata vidhwansaka Rasa, Kasturi bhairava Rasa, Ashwa kanchuki Rasa, Gulma kuthara Rasa, Maha jwarankusha Rasa, Chandra mrita Rasa, Kapha ketu Rasa, Prabhakara Vati, Pravala Panchamrita, Gandhaka Rasayana, Chaturbhuj rasa, Navajivan rasa, Shonitargal rasa, Raktapitta kulakandan rasa, Amavatari Rasa, Kravyada Rasa, Garbha chintamani Rasa, Chintamani Rasa, Trilokya chintamani Rasa, Pradarantaka Rasa, Vangeshwara Rasa, Brihat vangeshwara Rasa, Shwasakasa Chintamani Rasa, Arogya vardhini Vati, Chandra prabha Vati, Agni tundi vati, Shankha Vati.

- ii. Kupipakva Rasa:** Rasa Sindura, Makaradhwaja, Sidha makaradhwaja, Samira pannaga Swarnavanga, Malla sindura, Rasa karpura, Rasa pushpa, Manikyasa Rasa.
- iii. Parpati Rasa :** Rasa Parpati, Loha Parpati, Tamra Parpati, Suwarna Parpati, Gagana Parpati, Vijay Parpati, Panchamrit Parpati, Shwet Parpati, Bola Parpati
- iv. Pottali Rasa:** Rasagarbha pottali, Hemagarbha pottali, Mallagarbha pottali, Hiranyagarbha pottali, Shankagarbha pottali, Lokanatha rasa, Mriganka Pottali
- v. Loha evam Mandura Kalpa:** Ayaskriti, Loha Rasayana, Amla pittantaka loha, Chandanadi loha, Dhatri loha, Navayasa loha, Putapakva vishama jwarantaka loha, Shilajatwadi loha, Tapyadi loha, Saptamrita loha, Dhatri loha Amritasara Loha, Shankaramat loha, Pradarantaka loha, Rohitaka loha. Punarnava Mandura, Shatavari Mandura, Tara Mandura, Triphala Mandura, Mandura Vataka etc.

Part B

Detailed knowledge of Aushadhi patha Nischiti and sanyojan (formulation composition), dose, anupana and method of administration, therapeutic efficacy and uses (indications and contra-indications), probable mode of action etc. of the following Aushadhi yogas

i. Panchavidha Kashayas and their Upakalpa: Ardraka swarasa, Tulasi swarasa, Vasa putapaka swarasa, Nimba kalka, Rasona kalka, Kulattha Kwath, Punarnavasthaka kwatha, Rasna saptaka kwatha, Dhanyak hima, Sarivadi hima, Panchakola phanta, Tandulodaka, Mustadi pramathya, Kharjuradi mantha, Shadanga paniya, Laksha rasa, Arjuna kshirapaka, Rasona kshirapaka, Chinchapanaka, Candanapanaka, Banapsha sharkara, Nimbu sharkara, Amrita satva, Ardraka satva, Ajamoda arka, Yavanyadi arka

ii. Kritanna and Bhesaja Siddha Ahara Kalpana: Yavagu, (Krita and Akrita), Ashtaguna manda, Laja manda, Peya, Vilepi, Krishara, Yusha, Mudga yusha, Kulattha yusha, Saptamushtika yusha, Khada, Kambalika, Raga, Shadava, Mamsarasa, Veshavara, Dadhi, Katvar Dadhi, Dadhi Mastu, Takra, Gholi, Udasvita, Mathita, Chhacchika etc.

iii. Churna: Sitopaladi Churna, Talisadi Churna, Triphala Churna, Hingvashtaka Churna, Avipattikara Churna, Swadishta Virechana Churna, Bhaskar Lavana Churna, Sudarshana Churna, Maha Sudarshana Churna, Gandharva Haritaki Churna, Pushyanuga Churna, Ajamodadi Churna, Hingvadi Churna, Eladi Churna, Dadimashtaka Churna, Trikatu Churna, Vaishwanara Churna, Gangadhara Churna, Jati phaladi Churna, Narayana Churna etc.

iv. Gutika: Arogya vardhani vati, Chandra prabha vati, Chitrakadi Gutika, Sanjivani Vati, Lasunadi vati, Lavangadi Vati, Vyoshadi vati, Khadiradi Vati, Kankayana Vati, Abhayadi modaka, Marichyadi gutika, Amalakyadi gutika, Samshamini Vati, Kutaja Ghana vati, Amarasundari Vati, Shiva Gutika, Eladi Vati, Kasturyadi Gutika, Arshoghni Vati.

v. Guggulu: Yogaraja Guggulu, Maha yogaraja Guggulu, Trayodashanga Guggulu, Kanchanara Guggulu, Rasnadi Guggulu, Triphala Guggulu, Simhanada Guggulu, Gokshuradi Guggulu, Kaishora Guggulu, Panchatikta Guggulu, Amritadi Guggulu, Vatari Guggulu, Lakshadi Guggulu, Abha Guggulu, Navaka Guggulu, Nava Karshika Guggulu.

vi. Sneha Kalpa

Sneha Moorchhana - Ghrita Murchhana, Taila Murchhana

Siddha Ghrita - Shatavari Ghrita, Jatyadi Ghrita, Phala Ghrita, Dadimadi Ghrita, Kshirashatpala Ghrita, Mahatriphala Ghrita, Dhanvantari Ghrita, Amritaprasha Ghrita, Kalyanaka Ghrita, Brahmi Ghrita, Changeri Ghrita, Panchatikta Ghrita, Sukumara Ghrita, Panchagavya Ghrita

Siddha Taila - Maha Narayana Taila, Maha Masha Taila, Bala Taila, Nirgundi Taila, Shadbindu Taila, Vishagarbha Taila, Sahacharadi Taila, Jatyadi Taila, Apamarga Kshara Taila, Tuvarka Taila, Kshirabala Taila (Avartita), Lakshadi Taila, Anu Taila, Kumkumadi Taila, Hingutriguna Taila, Kottumchukadi Taila, Prasarinyadi Taila,

Dhanwantari Taila, Balashwagandhadi Taila, Balaguduchyadi Taila, Nilibhringyadi Taila, Brihadavadi Taila, Irimedadi Taila, Chandanadi Taila, Panchaguna taila, Arka taila, Pinda Taila, Kasisadya Taila

vii. Rasakriya, Avaleha, Khanda etc.: Darvi Rasakriya, Vasa Avaleha, Brahma rasayana, Chyavanprasha Avaleha, Kushmanda Avaleha, Dadima Avaleha, Bilvadi Avaleha, Kantakaryavaleha, Haridra Khanda, Narikela khanda, Saubhagya shunthi paka, Amrita Bhallataka, Kamsa Haritaki, Chitraka Haritaki, Vyaghri Haritaki, Bahushala Guda, Kalyana Guda

viii. Sandhana Kalpa: Lodhrasava, Kumaryasava, Ushirasava, Chandanasava, Kanakasava, Sarivadyasava, Pippalyasava, Lohasava, Vasakasava, Kutajarishta, Draksharishta, Raktamitrarka, Dashamularishta, Abhayarishta, Amritarishta, Ashokarishta, Sarasvatarishta, Arjunarishta, Khadirarishta, Ashwagandha Arishta, Vidangarishta, Takrarishta, Mahadrakshasava, Mritasanjivani sura, Maireya, Varuni, Sidhu, Kanji, Dhanyamla, Madhu Shukta, Pindasava.

ix. Anya Kalpa : Phala varti, Chandrodaya varti, Arka lavana, Narikela lavana, Triphala masi, Apamarga kshara, Snuhi kshara, Ksharasutra, Atasi upanaha, Sarjarasa malahara, Gandhaka malahara, Sindhuradi Malahara, Shatadhouta Ghrita, Sahasra Dhouta Ghrita, Siktha taila, Dashanga lepa, Doshaghna lepa, Bhallataka taila patana, Jyotishmati Taila, Bakuchi Taila, Dashanga dhupa, Arshoghna dhupa, Nishadi Netra bindu, Madhutailika Basti, Piccha Basti, Yapana Basti.

PAPER – IV Pharmacology and Pharmacy Management

PART - A

1. General Pharmacology:
 - a) Principles of Pharmacology, Pharmacodynamics & Pharmacokinetics: Absorption, distribution, Metabolism & excretion, mechanism of action, dose determination and dose response, structure activity relationship.
 - b) Routes of drug administration
 - c) Factors modifying drug effect, Bioavailability and Bioequivalence, drug interactions, adverse drug reaction and drug toxicity
 - d) Preclinical evaluation: experimental pharmacology [bioassay, in vitro, in vivo, cell line studies] animal ethics.
2. Clinical pharmacology: Evaluation of New Chemical Entity – phases and methods of clinical research. Ethics involved in human research.
3. Elemental constituents of human body and its physiological importance. Deficiencies and excess of various elements (micro-nutrients).
4. Toxicity of heavy metals and chelation therapy.
5. Knowledge of toxicity and pharmacological activities of herbo-mineral compounds.
6. Detailed Knowledge of Pharmacovigilance – National and International Scenario. Pharmacovigilance of Ayurvedic Drugs

Part B

1. Scope and evolution of pharmacy. Information resources in pharmacy and pharmaceutical Science.
2. Pharmaceutical dosage form design (Pre-formulation)
3. Packaging materials and Labeling
4. Management of pharmacy, store and inventory management, personnel management, Good Manufacturing Practices related to Ayurvedic drug industry.
5. Pharmaceutical Marketing, product release and withdrawals.
6. Hospital, Dispensing and Community pharmacy.
7. Patenting and Intellectual Property Rights.
8. Laws Governing Ayurvedic drugs

- i. Relevant regulatory provisions of Ayurvedic drugs in Drug and Cosmetics Act - 1940 and Rules - 1945
 - ii. Laws pertaining to Drugs and Magic remedies (Objectionable Advertisement) Act - 1954.
 - iii. Prevention of Food Adulteration (PFA) act.
 - iv. Food Standards and Safety Act - 2006
 - v. Laws pertaining to Narcotics
 - vi. Factory and Pharmacy Acts
 - vii. Consumer Protection Act -1986
9. Regulatory Affairs related to International Trade and Practices of Ayurvedic Drugs
 10. Introduction to Ayurvedic Pharmacopoeia of India, Ayurvedic Formulary of India.
 11. Introduction to Indian Pharmacopoeia, British and United States Pharmacopoeia, Pharmacopoeial Codex
 12. Introduction to Traditional Knowledge Digital Library

Practicals:-

Minimum 150 Practical are to be performed covering all the dosage forms.
 Educational Visits to minimum Five (5) GMP approved Ayurvedic Pharmacies.
 Ten days posting in R & D / Production unit in GMP certified Ayurvedic Pharmacy.
 Minimum attendance in three National Conferences within three academic years.
 Minimum 10 clinical cases using different dosage forms are to be studied and recorded for efficacy and ADRs (if any).
 Minimum one research paper on the core contributory work of dissertation published or accepted in peer reviewed, indexed journal.
 Examinee has to submit supporting documents in relation to above mentioned academic activities at the time of Practical examination.

Pattern of Practical Examination

Total Marks : 100

Duration of the practical: 2 days

- | | |
|---|-------------------------|
| 1. Identification of the specimen: | 10 Marks |
| 2. Drug Processing | 30 Marks
(10+10+5+5) |
| i) Major Practicals: 2 (1 Rasashastra and 1 Bhaishajya Kalpana) | |
| ii) Minor Practicals: 2 (1 Rasashastra and 1 Bhaishajya Kalpana) | |
| 3. Drug testing and Analysis | 10 Marks (5+5) |
| i) Rasaushadhi – 1 | |
| ii) Kashthaushadhi – 1 | |
| 4. Power Point Presentation on dissertation work: 15 Minutes | 10 Marks |
| 6. A Demo Lecture on any subject topic: 10 Minutes. | 10 Marks |
| 7. Documentation | 15 Marks |
| i. Journals (Practical Records) of minimum 75 practicals (25 each from Rasa Shastra, Bhaishajya Kalpana and Analytical part). | |
| ii. Reports of the Visits | |
| iii. Case Records | |
| 8. Viva Voce examination | 15 Marks |

Reference Books:-

1. Rasahridaya Tantra
2. Rasarnava

3. Rasaratna Samuccahaya
4. Ayurved Prakasha
5. Rasendrachudamani
6. Rasendra Chintamani
7. Rasatarangini
8. Rasapraksha Sudhakar
9. Rasamrita
10. Rasa Chandanshu : CCRAS Publication
11. Sharangadhara Samhita
12. Sharangadhara Darpan (BP Pandey)
13. Bhavaprakasha
14. Yoga Ratnakara
15. Bhaishajya Ratnavali
16. Siddha Bhaishajya Manimala
17. Ayurvediya Aushadhikarana – Puranik and Dhamanakar
18. Bharat Bhaishajya Ratnakara
19. Rasayoga Sagara
20. Siddha Bhaishajya Manimala
21. Siddha Yoga Sangraha – Yadavaji Trikamji Acharya
22. Sahasrayoga
23. Vaidyaka Paribhasha Pradeepa
24. Dravyaguna Vijnan Part - 1 and 2 - Yadavji Trikamji
25. Chakradatta - Ratnaprabha,
26. Relevant Parts from Charaka Samhita, Sushruta Samhita, Kashyapa Samhita, Ashtanga Sangraha, Ashtanga Hridaya,
27. Remington: Science and Practice of Pharmacy
28. Theory and Practice of Industrial Pharmacy – Leon Lachman *et al*
29. Clinical Pharmacology, KD Tripathi
30. Clinical Pharmacology, Lawrence Benette
31. Drug Discovery and Evaluation (Pharmacological assays) HG Vogel
32. Pharmacological Basis of therapeutics – Goodman and Gilman
33. Data Base of Medicinal Plants of CCRAS
34. Quality and Standards of Medicinal Plants – ICMR publication
35. Quality Control of Ayurvedic Drugs – PLIM, Gaziabad
36. Ayurvedic Pharmacopeia of India
37. Ayurvedic Formulary of India
38. Indian Pharmacopeia
39. British Pharmacopeia
40. United States Pharmacopeia
41. Pharmacopeia Codex
42. Current Good Manufacturing Practices
43. Drugs and Cosmetic Act 1940 and Rules 1945 with latest amendments
44. Drugs and Magic remedies (Objectionable advertisement) Act-1954
45. Prevention of Food Adulteration (PFA) act
46. Laws pertaining to Narcotics
47. Factory and Pharmacy Acts
48. Consumer Protection Act -1986
49. Brief information on the peer reviewed journals, official websites and other official search engines along with their links (related with the subject)
50. Rutleys Elements of Mineralogy
51. Bhasma Vigyaniam
52. Kupipakva Vigyaniam
53. Anupana Manjari

6. AGADA TANTRA EVUM VIDHIVAIIDYAKA

PAPER-I Agada Tantra (Ayurvedic and Contemporary Toxicology)

100 marks

1. Agada Tantra, its sequential development during Veda kala, Samhitha kala, Samgraha kala and Adhunika kala.
2. Definition of Visha, properties of visha and its comparison with madya and oja, visha samprapti, visha prabhava, visha-vega, vegantara and visha karmukata (toxicodynamic and toxicokinetic study).
3. Descriptive and comparative study of Upavisha in unison with Contemporary Toxicology.
4. Examination of poisons as per Contemporary and Ayurvedic Methods.
5. Descriptive study of sthavara visha, definition, classifications, classical signs and symptoms of poisoning including vanaspatic (phyto poison), khanija (mineral) and compound sthavara visha.
6. Study of Jangama visha and their sources (Animal poisoning and Zoonotic Diseases). Descriptive study of snakes according to ancient and contemporary knowledge. Causes of snake bite and its types. Composition of snake venom and its pharmacological actions. Signs and symptoms of envenomation and its prognostic signs. Clinical features of Vrischika (scorpion), Luta (spider), Grihagadhika (Lizard), Mushaka (rats), Alarka (dogs), Makshika and Mashaka (mosquitoes) and their pathologic manifestations including their role in the manifestation of communicable diseases.
Shanka visha and its management. Visha sankat and Visha Kanya.
7. Garavisha and Dushi visha, their varieties, signs, symptoms and management with contemporary relevance. Detailed study of Allergies including allergic manifestations in the eyes, nose, lungs and skin.
8. Detailed study of Madya visha and substances acting on the nervous system; substance abuse. (Diagnosis, Management and De-addiction)
9. Detailed study of the contemporary knowledge about vishajanya Janpadodhvarsaniya roga (community health problems due to poisons - Environmental pollution, water pollution, soil pollution, air pollution, Industrial pollutions etc. their features and management according to ancient and recent concepts.
10. Concept of Virudha aahara, Aahara visha and Satmyasatmyata in contemporary and Ayurvedic views.
11. Conceptual study: - Drug interactions and incompatibility, Pharmacovigilance

PAPER- II Visha Chikitsa Vigyan (Management Of Poisoning)

100 marks

1. Fundamental Principles for treatment of poisoning
2. General and specific treatment of different types of Sthavara visha.
3. General and specific treatment of different types of Jangama visha (animal poisons, insect poisons, snake bites and other zoonotic diseases).
4. Emergency medical management of poisoning including preparation, administration and complications of antivenoms/antisera.
5. Chaturvimsati upakrama (24 management procedures).
6. Management of Garavisha and Dushivisha. Treatment of Allergies including allergic manifestations in the eyes, nose, lungs and skin.
7. Diagnosis and Management of Drug Induced Toxicity
8. Management of the toxic manifestations caused by the contact poisons (paduka, vasthra, abharana, mukhalepa- vishabadha etc).
9. Management of food poisoning.
10. Death due to poisoning, Duty of physician in poisoning, in cases of suspected poisoning. Post mortem findings in poisoning.
11. Extra -corporeal techniques (dialysis etc) for removal of poisons.

PAPER –III Vyavahara Ayurveda Evam Vidhi Vaidyaka**100 marks**

1. Definition of Vyavahara Ayurveda, its evolution in ancient and contemporary periods.
2. Personal identity and its medico-legal aspects
3. Death and its medico-legal aspects (Medical Thanatology)
4. Asphyxial deaths and its medico-legal importance.
5. Death due to starvation, heat and cold, lightening and electricity. Suspended Animation.
6. Medico-legal autopsy.
7. Injuries due to explosions, chemical and nuclear warfare.
8. Medico-legal aspects of injuries and wounds.
9. Impotence and sterility-Its medico-legal aspects. Regulations of Artificial Insemination. Medico –legal aspects of surrogate motherhood.
10. Sexual offences and perversions.
11. Medico-legal aspects of virginity, pregnancy, delivery, abortion, infanticide and legitimacy with related acts.
12. Indian Penal Code, Criminal procedure code and study of related acts like Indian Evidence Act, Pre Natal Diagnostic Test Act, Nursing Home Act, Human Organ Transplantation Act, Drugs and Cosmetic Act 1940, Narcotic drugs and Psychotropic substances Act 1985, Pharmacy Act 1948, Drugs and Magical Remedies (Objectionable Advertisements) Act 1954, Medicinal and Toilet Preparations Act 1955 and Anatomy Act etc. Any related act enacted by the government from time to time.
13. Courts and Legal procedures.
14. Forensic Science Laboratory
15. Medico legal aspects of mental illness
16. Duties and privileges of physician.
17. Structure of Central Council of Indian Medicine, its jurisdiction and functions. Code and Conducts as per the CCIM, Rules and Regulations there under.
18. Respective State Council of Indian Medicine, its structure, power, voluntary duties.
19. Doctor - patient relationship.
20. Rights and privileges of patients; Euthanasia.
21. Professional secrecy and privileged communication.
22. Professional negligence and malpractice
23. Indemnity Insurance scheme.
24. Consumer Protection Act related to medical practice.
25. Ethics as in classics. Types of physicians and methods of identification, Pranabhisara and Rogabhisara Physicians, qualities of physician, responsibilities of Physicians, Chaturvidha vaidya vriti, duties of physicians towards patients, Vaidya sadvritam, Apujya Vaidya who is accepting fees, relationship with females.

PAPER – IV Aushadha Yoga Vigyan**100 marks**

1. Study of process for sodhana, marana and samskarana of poisonous drugs.
2. Pharmaco-dynamics of different formulations used in Agadatantra
3. Study of pharmacology and usage of antidotes as per the Ayurvedic and contemporary science.
4. Fundamentals of pharmaceuticals according to Ayurvedic and contemporary point of view.
5. Chemical, analytical, laboratory examination of poisons and suspicious substance.
6. Introduction of different instruments /equipments used in the examination of poisons.
7. Introduction to Clinical toxicology
8. Introduction to Experimental toxicology

9. Introduction to Toxicology - genomics
10. Survey and study of the traditional and folklore vishachikista sampradaya.

Content of Practical/Demonstration

1. Identification of specimens models and equipments of toxicological and jurisprudence importance.
2. Practical training in postmortem examination (10 cases)
3. Regular clinical postings in the Agadatantra OPD / IPD
4. Medico-legal cases (20 cases)
5. Chemical Identification of various acids, alkalies, alcohols – Hydrochloric acid, Nitric acid, Sulphuric acid, Ascorbic acid, Sodium Hydroxide and Potassium Hydroxide
6. Detection of minerals Copper, Mercury, Lead, Arsenic and their compounds.
7. Physical and Chemical analysis of Datura, Karaveera, Vatsanabha, Jayapala, Arka and Bhallataka with Microscopy, powder microscopy, TLC, solvent extraction, detection of Phenol, tannins etc. (10 studies)
8. Detection of human blood, hair, semen and other biological secretions of Forensic importance.
9. Herbarium of 15 sthavara vishas and 10 agadas.
10. Preparation of two Agada yogas

Clinical Postings

1. Modern medical hospitals – 2 weeks
(For emergency management of poisoning)
2. Postmortem postings - 2 weeks
3. Court postings - 1 week

Visit to

1. Forensic Laboratory
2. Anti snake venom serum manufacturing Unit.

Pattern of practical examination

- | | |
|---|------------------|
| 1. Post mortem / Medico-legal case record and clinical record | - 10 Marks |
| 2. Identification of specimens models and equipments of jurisprudence importance. | - 20 Marks |
| 3. Spotting related to Visha, Upavisha and others poisonous drugs | - 20 Marks |
| 4. Thesis presentation | - 25 Marks |
| 5. Viva-voce | - 25 Marks |
| Total | 100 Marks |

Reference Books:-

1. Useful Portion of Charak-Sushrut-Vagbhata
2. Dravyaguna Vigyan - Acharya Yadavji
3. Aushadhigunadharm Shastra - Pt Visvanath Dvivedi
4. Kriyatmat Aushada parichaya Vigyan - Pt Visvanath Dvivedi
5. Ayurvedic Vyadhi Vigyan - Acharya Yadavji Trikamji
6. Madhavanidan with Madhukosha commentary
7. Sharangadhara Samhita
8. Yogaratnakara
9. Aushadigunadharm Shastra -PtGangadharaShastri Gune
10. Rasendracintamani
11. Rasaratna samuchhaya
12. Vishavigyan - Dr. Krishna Kumar
13. Related matter of Kautilya Artha Shastra
14. Harmekhlatantra
15. Anupana manjari

16. Ayurvedprakash
 17. System of clinical Medicine
 18. Forensic Pharmacy
 19. Hand book of Forensic Medicine and toxicology
 20. Viva Forensic Medicine and toxicology
 21. Forensic Medicine and Ethics
 22. Modi's Medical Jurispudence and Toxicology
 23. The essentials of forensic medicine and toxicology
 24. Medical Laws and Ethics
 25. M.R.K. Krishnan's Handbook of Forensic Medicine
 26. Text book of Medical Jurisprudence and Toxicology
 27. Atlas of Forensic Medicine
 28. Medico legal Post Mortems (Atlas)
 29. Textbook of Forensic Medicine and Toxicology
 30. Textbook of Forensic Medicine and Toxicology
 31. Textbook of Forensic Medicine and Toxicology
 32. Textbook of Forensic Medicine and Toxicology
 33. Forensic Pathology
 34. Textbook of Forensic Medicine and Toxicology
 35. Pocket picture guide to Forensic Medicine
 36. Forensic Medicine
 37. Taylor's Principles and Practical of Medical Jurisprudence
 38. Doctor and law
 39. Textbook of Toxicology
 40. Medicine Harrison's Principal of Internal Medicine
 41. Agad Tantra
 42. Modern Medical Toxicology
 43. Critical care toxicology
 44. Diagnosis and Management of common poisoning
 45. Colour Atlas of Forensic Medicine
 46. Guidelines of poisons
 47. Doctors patients relationships
 48. Bhavaprakasha.
 49. Vishavaidya Jyotsnika -- English translation By VPSV Ayurveda college, Kottakkal.
 50. Lakshnamritham.
 51. Toxicology, Ayurvedic perspective
 52. Text book of Agadatantra
 53. Agadatantra ki Pathyapustaka
 54. Vyavahar Ayurveda Vigyanam
 55. Forensic Medicine
 56. Visha Chikitsa
 57. Park Text book of Preventive and Social Medicine.
 58. Environmental Science and Biotechnology
 59. Veterinary Toxicology
 60. Guide to Drinking Water Quality (3 Volumes)
 61. A short Text Book of Medical Entomology
- Savil
 - B.M. Mhithai
 - Dr. P.V. Chadha
 - L.C. Gupta
 - J.P. Narena

 - Dr.K.S. Narayan Reddy
 - Dr. H.S. Mehta

 - Dr. C.K. Parikh
 - Dr. Tomio Watenbe
 - Dr. Parikh and Others
 - Dr.V.V. Pillay
 - Dr. Karmakar
 - Dr. Singhal
 - Dr. Krishnan Vij
 - Dr. Bernard Knight
 - Lyon's
 - Gower's Medical Publication
 - Simpson Knight
 - J and A Churchis
 - Singhal
 -Singhal

 - Dr. Shekhar Namboodri
 - Dr. V.V.Pillay
 - Bruent Wallace
 - Agarwal wali
 - Govindaiah
 - W.H.O.
 - Dr.Lavekar

 - VPSV Ayurveda college, Kottakkal
 - Edited By Dr Huparikar, Dr. Joglekar
 - Edited By Dr Huparikar, Dr. Joglekar
 - Dr.Indramohan Jha (Sachchan)
 - Dr. B. Umadathan
 - Dr. M. Balakrishnan Nair
 - K. Park
 - Theory and Practice - A.G. Murukesan &C. Rajakumari
 - Dr. Satish K. Gargi
 - WHO Publication
 - H.S. Bhatti, R. Sehgal, R.C. Mahajan.

7. SWASTHAVRITTA

PAPER I VAIYAKTIKA SWASTHAVRITTAM SADVRITTAM CHA

Marks 100

1. Concept of holistic health according to Ayurveda.
2. Spectrum of health, Iceberg phenomenon of diseases, dimensions of health.
3. Dinacharya – Detailed accounts by Charaka, Sushruta, Vagbhata and Bhavamishra.
4. Probable Physiologic effect of Dinacharya procedures.
5. Ratricharya – Bhavamishra and other classics.
6. Day and night pattern in various countries.
7. Ritucharya – Classical description by Charaka, Sushruta, Vagbhata, BhelaSamhita and Bhavamishra.
8. Ritus prevalent in various Indian states.
9. Ritu pattern in various countries of the world.
10. Shodhana Schedule for Ritusandhis.
11. Concept of Vegas, types and the physiology behind each vega and vegadharana.
12. Ahara – Classical food items in Charaka, Sushruta, Vagbhata and Sharangadhara.
13. Aharavargas and comparison with todays' food items.
14. Staple diet of various States of India.
15. Staple diet of various countries in correlation with their climate.
16. Principles of dietetics. Balanced diet for healthy adult, adolescent, elderly people, pregnant ladies and lactating mothers.
17. Food intervention in malnutrition, under nutrition and over nutrition.
18. Rules of food intake according to Charaka, Sushruta and Vagbhata.
19. Pros and Cons of vegetarian and Non vegetarian foods.
20. Viruddhahara – Classical and modern day examples.
21. Sadvritta – Compare Charaka, Sushruta and Vagbhata .
22. Prajnaparadha – Causes, Effects and solution.
23. AcharaRasayana, Nityarasayana.
24. Rasayana procedures for Swastha
25. Vajeekarana for Swastha.
26. Mental Health and the role of Ayurveda in it.
27. Vyadhikshamatva – Modern and Ayurvedic concepts.
28. Principles of Health Education.
29. Genetics in Ayurveda and Modern Science

PAPER II SAMAJIKA SWASTHAVRITTAM (COMMUNITY HEALTH)

Marks 100

1. Concept of community health.
2. Concept of Prevention according to Ayurveda.
3. Concept of prevention according to Modern medicine. Levels of prevention. Stages of intervention.
4. Web of causation of diseases, Multifactorial causation.
5. Natural History of diseases.
6. Ecology and community health.
7. Disinfection practices for the community – Modern and Ayurvedic.
8. Immunization programmes. Possible contribution of Ayurveda.
9. Environment and community health (Bhumi, Jala, Vayu, Shuddhikarana ,Prakasha,Shabda, Vikirana)
10. Housing –W.H.O Standards. Design of Aaturalaya(hospital), Sutikagara, Kumaragara, Panchakarmagara and Mahanasa (Kitchen)
11. Disposal of Wastes- Refuse, Sewage. Methods of Sewage disposal in sewerred and unsewerred areas.
12. Occupational Health. Ergonomics. Role of Ayurveda in ESI.
13. Medical Entomology– Arthropods of Medical Importance and their control measures.

14. Knowledge of parasites in relation to communicable diseases.
15. School Health Services and possible contribution of Ayurveda.
16. Demography and Family Planning.
17. Family Welfare Programme and the role of Ayurveda in it.
18. Old age problems in community. Role of Ayurveda in Geriatrics.
19. Care of the disabled.
20. Life Style disorders (Non Communicable diseases) in community and the role of Ayurveda in them.
21. Health tourism. Ayurvedic Resort Management- Panchakarma and allied procedures.
22. Medical Sociology.

PAPER III SAMKRAMAKA ROGA PRATISHEDHAM EVAM SWASTHYAPRASHASANAM

Marks 100

1. Modern Concept of Epidemiology
2. Critical evaluation of Janapadodhwamsa.
3. Epidemiology of different Communicable diseases in detail.
4. General investigations for Communicable diseases
5. Sexually Transmitted Diseases and their control
6. Ayurvedic view of Samkramaka Rogas.
7. Investigation of an Epidemic
8. Control of Epidemics.
9. Host Defenses.
10. Ayurvedic methods of Vyadhikshamatva.
11. Health advice to travelers.
12. Hospital, Isolation ward and bio medical waste management
13. National Health Programmes. Contribution of Ayurveda in National Health Programmes.
14. Health administration under Ministry of H &FWD
15. AYUSH , NRHM, NUHM administration, functions and programmes.
16. National and International Health Agencies and their current activities.
17. Disaster management
18. Statistics related with Infectious diseases at International, National and State levels
19. Vital Statistics

PAPER IV YOGA AND NISARGOPACHARA

Marks 100

1. History and evolution of Yoga
2. Different Schools of Yoga
3. Rajayoga –(Ashtanga yoga) philosophy of Patanjali according to Yogasutras.
4. Hathayoga - according to Hathayogapradeepika, GherandaSamhita and Shivsanhita.
5. Karmayoga – Philosophy according to Bhagavad Gita
6. Mantrayoga, Layayoga, Jnanayoga and Bhaktiyoga.
7. Physiological effect of Yoga on Body and mind – Ancient and modern concepts.
8. Concept of Sthula, Sukshma and Karana Shariras
9. Concept of Panchakoshas
10. Concept of Shad chakras and Kundalini
11. Shad Kriyas and their therapeutic effects.
12. Therapeutic effect of yogic practice in the following diseases - Diabetes, Hypertension, Cardiovascular disorders, Obesity, Asthma, Piles, Irritable Bowel Syndrome, Eczema, Psoriasis, Stress Disorders, Eye disorders, Head Ache, Juvenile Delinquency, Mental retardation, Depression, Neurosis, Sexual Dysfunction, Uterine Disorders, Cancer.

13. Yoga in Ayurveda –Concept of moksha,Tools for Moksha,Naishtikichikitsa, TatvaSmriti, Satyabudhhi, yoginamBalamAishwaram (charakaSamhitaSharirasthan chapter 1 & 5)
14. History of Nisargopachara.
15. Basic Principles of Western School of Nature Cure
16. Basic Principles of Indian School of Nature Cure – Panchabhuta Upasana and its therapeutic utility.
17. Different types of Massage and their therapeutic effects
18. Concepts of Acupuncture and Acupressure.
19. Principles of Chromotherapy and Magnetotherapy

Scheme of Practicals

1.Health promotive and protective practices of Dinacharya procedures viz. Dantadhavana, Anjana, Nasya, Kavala, Gandusha, Dhumapana, Abhyanga, Udvartana

2) Practical Demonstration of Yoga

a) Aasanas (24)

- 1) Swastikasan
 - 2) Gomukhasan,
 - 3) Sarpasan,
 - 4) Kukuttasan,
 - 5) Uttankurmasan,
 - 6) Dhanurasan,
 - 7) Matsyendrasan,
 - 8) Mayurasan,
 - 9) Bhadrasan,
 - 10)Sinhasan,
 - 11)Sarvangasan,
 - 12)Shirshasan,
 - 13)Pavanmuktasan,
 - 14)Bhujangasan,
 - 15)SuptaVajrasan,
 - 16)Chakrasan,
 - 17)Siddhasan,
 - 18)Padmasan,
 - 19)Veerasan,
 - 20)Paschimatanasan,
 - 21)Vajrasan,
 - 22) Shavasan,
 - 23)Makarasan,
- Suryanamaskara

b) Pranayama

- 1) Nadishudhhi- AnulomVilomPranayam,
- 2) Suryabhedani,
- 3) Ujjayi,
- 4) Bhasrika,
- 5) Bhramari,
- 6) Sheetali,
- 7) Sitkari

c) Mudra

1) Viparita karani

- 2) Yoga Mudra
- 3) Maha Mudra
- 4) brahma Mudra
- 5) Ashwini mudra

d) Bandha

1) Jalandhara, uddiyana, mula bandha

e) Shuddhikriya – JalaNeti, Sutra Neti, JalaDhauti, Kapalbhata, Tratak Basti, Nauli, vastra dhauti (if possible)

3) Practical Demonstration of Naturopathy procedures

- a. MruttikaSnana
- b. Mruttika Patti
- c. Pada and Hasta Snana
- d. Bashpasnana (Steam bath)
- e. Awagahana (Immersion bath)
- f. prishtasnana (Spinal bath)
- g. Katisnana(Hip bath)
- h. Alternate hot and cold bath
- i. Observe Jacuzzi and whirlpool bath at available places.

4) Long case sheets for Pathya, Apathya, Aushadhi (if needed), Yoga and Nisargopachara advice to

- a) Non communicable diseases 20
- b) Communicable diseases 10
- c) Garbhini Paricharya 10
- d) Mal Nutrition treatment cases 10
- e) Case studies of Immunization cases 10

iv) Departmental Practicals

- 1) Dantadhawana - 2
- 2) Anjana - 2
- 3) Nasya - 2
- 4) Gandusha- 2
- 5) Kavala- 2
- 6) Dhoompana – DhumavartiNirmana - 2

5) Educational Visits-

The brief report of each visit (Minimum 10 compulsory) should be written by student in a journal (Duly signed by Guide and HOD)

- 1) Water Purification Centre,
- 2) Milk Dairy,
- 3) Industry,
- 4) Leprosy Centre,
- 5) T.B. Centre,
- 6) Yoga Centre,
- 7) Naturopathy Centre,
- 8) Primary Health Center
- 9) Disposal of Waste Unit,
- 10) Sewage Disposal Unit ,
- 11) Hospital Disinfections,
- 12) Govt. Psychiatric Hospital
- 13) Isolation Hospital
- 14) A.R.T. Centre
- 15) Food and Drug Administration Centre
- 16) District /Civil Hospital

7) Field Work

- a) Active Participation in Various National Health Programmes
- b) Community Health Survey
- c) School Health Check-up (minimum 100 students)
8. Departmental duties : Regular Attendance as-

Duty in OPD and IPD with regard to Pathyapathya, Yoga and Nisargopachar.

1. Museum Development
2. Yoga training for self Swastha and patients.
3. Departmental Seminars
4. Research Journal /Article Reviews
5. Submit minimum 2 papers in any publications.
6. Practical knowledge of AharaDravya&Adulteration of Food
7. Proper planning, beginning ,completion of Thesis work under the guides
8. Micro Teaching (Training to take Lectures and Practicals of UG). Minimum 10.
9. Daily diary- Log book

Format of Practical / Oral Examination

Sr.No.	Heading of Practicals	Marks
1	Daily work book-Log book	10
2	Case Record Sheets	20
3	One Long Case (Pathya-Apathya advice)	20
4	Two Short Cases(10X2) (Yoga and naturopathy advice each)	20
5	Spotting on Instrument/Equipment/ Medicine/Solve a Problem-(10 Spots x2)	20
6	Thesis Presentation	50
7	Viva Voce	60
	Total	200

Reference Books:-

- 1) Relevant portions of Charak, Sushruta, Vagbhata (AshtangHrudaya), Ashtang Samgraha, Sarangadhara, Bhavaprakasha, Madhavanidan&Yogaratanakara, Bhela Samhita with the respective commentaries
- 1) SwasthavrittaSamuchaya –VaidyaPtRajesvarDuttaShastri
- 2) SwasthyaVignyana -Dr.B.G.Ghanekarshastri
- 3) PrakritikaChikitsa -Kedarnath Gupta
- 4) Reddy's Comprehensive Guide to Swasthavritta –Dr.P.Sudhakar Reddy
- 5) SwasthaVigyan - Dr.MukundswaroopVerma
- 6) Ayurvediya Hitopdesh - Vd.RanjitRai Desai
- 7) Yoga and Ayurveda - Dr.Rajkumar Jain
- 8) SwasthvrittaVigyan - Dr.Ramharsha Singh.
- 9) Swasthvrittam - Dr.BramhanandTripathi
- 10) AyurvediyaSwasthvrittam - Vd.Jalukar
- 11) HathayogPradipika – SwatmaramYogendra (Kaivalyadhama)
- 12)YogikYogPadhati - BharatiyaprakrutikChikitsaPadhat
- 13)YogikChikitsa - ShriKedarnath Gupta
- 14)PrakrutikChikitsaVigyan - Verma
- 15)Janasankhyashikshasidhanta evamUpadeysa - S.C.Seel
- 16)Swasthvritta - Dr.Shivkumar Gaud
- 17) Health and Familywelfare - T.L.Devraj
- 18)SachitraYogasanDarshika - Dr.IndramohanJha
- 19)Preventive and Social medicine - J.K.Park
- 20)Yogadeepika - Shri. B.K.S. Iyengar
- 21) Swasthavritta - Vd.Sakad
- 22)Positive Health - Dr.L.P.Gupta
- 23)Biogenic Secretes of Food In Ayurveda - Dr.L.P.Gupta
- 24)Yoga and Yogikchikitsa - Ramharsha Singh
- 25)The Foundation of Contempary Yoga - R.H.Singh
- 26)YogasidhantaevumSadhna - H.S.Datar

- 27) Patanjali Yoga Sutra – Maharshi Patanjali, Karambelkar
- 28) Prakritik Chikitsa Vidhi - Sharan Prasad
- 29) Text book of Swasthavritta - Dr. Ranade, Dr. Bobade, Dr. Deshpande
- 30) Gherand Samhita
- 31) Bio-Statistics - B.K. Mahajan
- 32) Swasthavrittavidnyan - Dr. Mangala Gauri
- 33) Community Medicine - Baride and Kulkarni.
- 34) Light on Yoga - Shri. B.K.S. Iyengar
- 35) Light on Pranayama - Shri. B.K.S. Iyengar
- 36) Light on Patanjala yogasutra - Shri. B.K.S. Iyengar
- 37) Shiva samhita – Kaivalyadhama
- 38) Gheranda samhita – Kaivalyadhama
- 39) Swasthavritta vigyan – Vd. Patrikar Vijay
- 40) Swasthavritta – Vd. Yashwant Patil and Vd. Vhawal
- 41) Food and nutrition – Swaminathan
- 42) Preventive and Social Medicine – Mahajan
- 42) Preventive and Social Medicine – B.N. Ghosh
- 43) Preventive and Social Medicine – Gupta
- 44) Yoga and Nisargopachar- Vd. Prama Joshi

Syllabus prepared by

1. Dr. Mihir Hajarnavis (Group leader)
2. Dr. Arpan Bhatt (Coordinator)
3. Dr. S. Venugopal Rao
4. Dr. Sajitha.K
5. Dr. Yeshwant.R. Patil
6. Dr. Poornima Krishnamurthy
7. Dr. Yashwant Chauhan.
8. Dr. Rajkumar Bobade
9. Dr. Jayan Damodaran
10. Dr. Yogeshwar Dayal Bansal
11. Dr. Sudhanshu Dutt Sharma

8. ROGA NIDANA

PAPER- I FUNDAMENTAL PRINCIPLES OF ROGANIDANA

Concept of Tridosha and its Pathological implications. 63 permutations and combination of Tridosha. Lina and Stambhita Dosha, their cause and importance in manifestation of Samprapti

Concept of Rakta as a Chaturtha Dosha. Importance of Rakta in the manifestation of diseases.

Concept of Ashrayashrayi bhava and its applied utility.

Different types of Dosha Gati.

Causative factors and practical utility of movement of Doshas from Kostha to Shakha and Shakha to Koshtha. Concept of Ashayapakarsha.

Trayo roga marga, their diseases and clinical importance of Roga Marga.

Concept and classification of Avarana, its role in pathogenesis, mode of diagnosis of Avarana and its importance in chikitsa sutra.

Applied aspect of Dhatu Poshana Krama and Dhatu Samvahana. Concept of Margaga and Sthanastha Dhatus.

Concept and applied aspects of Doshapaka and Dhatupaka

Fundamental and applied aspect of Dhatu, Upadhatu and Mala. Diseases developed due to their vitiation (pradoshaja vikara).

Concept and applied aspects of Srotas, their importance in health and diseased conditions.

Concept and applied aspects of Sroto Dushti and Khavaigunya. Understanding the various srotas which are not included in classical list of srotas but enumerated while describing the samprapti of diseases.

Description of Dosha-Dushya-Sammurchhana, Concept of Prakriti Sama Samaveta and Vikriti Vishama Samaveta Sammurchhana. Importance of Dosha-Dushya-Sammurchhana in Diagnosis and treatment.

Concept of Vikara vighata bhavabhava prativisesha.

Concept of Agni and its role in manifestation of health and disease.

Concept and pathogenesis of Ama. Contemporary interpretation of Ama and its role in pathogenesis.

Sama, Nirama stages of Dosha, Dhatu and Mala.

Understanding Samprapti of Santarpanottha and Apatarpanottha Vyadhi

Detailed classification of diseases as described in Ayurveda. Knowledge of ICD and DSM classification.

Detailed understanding of Nidan Panchaka with their classification and clinical importance.

Relation between 'Hetu & Lakshana' and 'Samprapti & Lakshna'.

Explanation and applied aspects of Kriyakala and its utility in diagnosis and treatment.

Importance of Upadrava, Arishta and Sadhyasadhyata and Udarka.

Natural History of the Diseases, concept of vyadhisankara in Ayurveda.

PAPER – II ROGA VIGYANA

Knowledge of classical Samprapti of following diseases with interpretation of Nidana Panchaka including Upadrava, Arishta and Sadhyasadhyata and Chikitsa Sutra. Knowledge of commonly occurring diseases of the respective systems mentioned in contemporary medicine and their Ayurvedic interpretation.

1. Diseases of Pranavaha srotas- Kasa - Shwasa - Hikka – Urahkshata – Shosha – Rajayakshma and Ayurvedic understanding of common clinical entities like Pneumonia, Pleural effusion, Bronchitis, Bronchiectasis, Pulmonary Tuberculosis, Bronchial Asthma.
2. Diseases of Annavaha- Pureeshavaha Srotas- Agnimandya - Ajirna - Aruchi- Chhardi, Amlapitta- Shoola, Grahani –Gulma- Udara Roga –Vibandha, Atisara – Pravahika along

- with various clinical presentations. Ayurvedic understanding of common clinical entities like Peptic Ulcer, Irritable Bowel Syndrome, Diarrhoea, Dysentery, Constipation, ulcerative colitis.
3. Diseases of Udakavaha Srotas- Trishna, Daha and knowledge of water and electrolyte imbalance disorders
 4. Diseases of Rasavaha Srotas - jwara and Ayurvedic understanding of common clinical entities like various types of Fever- Malaria, Typhoid, viral fevers. Pandu, Amavata, Hridroga, Shotha and Ayurvedic understanding of common clinical entities like Anaemia & its Classification, Rheumatic fever, Rheumatoid Arthritis, Angina, Ischaemic Heart Disease, Hypertension, Myocardial Infarction ,Congestive cardiac failure.
 5. Diseases of Raktavaha Srotas- Kamala - Raktapitta - Vatarakta – Kroshtukaseersha - Shitapitta – Maha Kushta – Visarpa – Shwitra and Kshudra Kushta and Ayurvedic understanding of common clinical entities like jaundice, hepatitis, bleeding disorders, Gout, Thrombo Angitis Obliterans (TAO), Deep Vein Thrombosis (DVT), Leukaemia, Thalessemia, Sickle cell Anaemia. Introduction to Urticaria, Psoriasis, Eczema, Pemphigus, Herpes.
 6. Diseases of Mamsavaha srotas- Introduction to Granthi, Arbuda, Galaganda and Arsha. Ayurvedic understanding of all types neoplasia and Thyroid diseases.
 7. Diseases of Medovaha srotas- Sthoulya - Karshya – Prameha and Ayurvedic understanding of common clinical entities like Obesity and Diabetes Mellitus.
 8. Diseases of Asthi - Majjavaha srotas- Sandhigatavata, Introduction to Asthi-majjaparipaka, Asthigata Vidradhi and Ayurvedic understanding of common clinical entities like Osteo- Arthritis, Osteomyelitis, Osteoporosis.
 9. Vatavyadhi-Akshepaka - Apatanaka - Ardita - Pakshaghata – Gridhrasi – Viswachi, Avabahuka, Manyasthambha – Katigraha-Pangutwa- Khanja-Khalwee and Ayurvedic understanding of common clinical entities like Hemiplegia, Parkinson's disease, Lumbago- Sciatica syndrome, Bell's Palsy, Ankylosing Spondylitis, MND and other commonly occurring neurological diseases.
 10. Diseases of Sukravaha srotas- Klaibya and Vandhyatva and understanding of male and female Infertility, Impotence.
 11. Diseases of Mutravaha srotas -Mutrakrichha – Mutraghata, Ashmari and Ayurvedic understanding of common clinical entities like Urinary Tract Infection, Urolithiasis, Nephropathies and Renal failure.
 12. Diseases of Swedavaha srotas-knowledge of khalitya, Palitya and Cosmetology.
 13. Diseases of Manovaha Srotas - Vishada, Udvega, Bhaya, Bhrama, Anidra, Mada, Murchha, Sanyasa, Apsmara, Unmada, Atatwabhinivesha and Ayurvedic understanding of common clinical entities like Depression, Anxiety neurosis, Phobia, Personality disorders.
 14. Indriya Pradoshaja Vikara.
 15. Jara janya Vyadhi: Alzheimer's Disease
 16. Concept and tools for the study of Anukta Vyadhi (Unexplained and newly emerging diseases).
 17. Understanding the concept of karmaja vyadhi

PAPER – III PARIKSHA VIGYANA

1. Introduction to Clinical methods and technique for the study of clinical examination
2. Importance of medical history taking and its importance in clinical medicine.
3. Aims, Objectives and Methods, applied aspects and importance of various Rogi and Roga Pariksha as per classics.
4. Srotas Pariksha, Shadanga Pariksha vis-à-vis general & systemic examination of patient.
5. Interpretation of Charakokta trividha pramana pariksha and Sushrutokta shadvidha pariksha with clinical methods mentioned in modern medicine.
6. Interpretation and use of ashtasthana nirikshana along with use of current tools as per Ayurveda.

7. Charakokta dashavidha and Sushrutokta Dwadashavidha pariksha along with the use of modern supportive tools for understanding of rogi bala and roga bala concept to derive chikitsa sutra
8. Ayurvedic interpretation of all relevant findings of modern clinical examinations, various Laboratory and other Diagnostic tools.
9. Understanding of diagnostic procedures in medical emergencies.
10. Concept of Good clinical practice in Ayurveda and modern medicine.
11. Knowledge of standard clinical laboratory set up useful for Ayurvedic practice.
12. Knowledge of Ancillary common laboratory investigations for diagnosis of diseases, their methods, normal and abnormal values, factors influencing values and their Ayurvedic interpretations & clinical significance as mentioned in practical syllabus.
13. Importance of Bio markers and their utility in clinical researches
14. . Update knowledge of emerging diagnostic tools and technologies.
15. . Knowledge of various Ayurvedic diagnostic softwares/programmes available.
16. Avayava Pariksha – Radio- Imaging Techniques, Sonological Techniques, ECG, EEG etc and their clinical interpretation.

PAPER - IV VIKRITI VIGYANA AND JIVANU VIGYANA

1. Introduction to pathology and technique for the study of pathology
2. Cell injury and cellular adaptations
3. Immunopathology including amyloidosis and its interpretation with the concept of Ojas vis-à-vis Bala
4. Concept of Shotha versus Inflammation, oedema and healing
5. Derangement of Homeostasis and Hemodynamic disorders
6. |General character and classification of Neoplasia
7. Upasargjanya Vyadhi (Communicable diseases)- Romantika – Masurika – Upadamsha – Phirang and introduction to Syphilis, AIDS, Leprosy, Tuberculosis
8. Detail study of Krimi Vigyanam versus infectious and parasitic diseases along with their mode of infection and life cycle
9. Concept of Snayuka, Shleepada and introduction to Filariasis and classification of common parasites.
10. Concept and applied aspects of Janapadodhvasa and Environmental diseases
11. Nutritional disorders
12. Concept of genetic diseases and its interpretation in terms of Bija dosha
13. Knowledge of common Bacteria, Virus, Parasites, Fungi and their classification with their disease processes, Nutrition requirements, media and methods for culture and sensitivity

PRACTICAL DEMONSTRATION AND HANDS ON EXPERIENCE

1. Regular posting in Roga Nidana O.P.D.
2. Regular posting in Roga nidana I.P.D.
3. Regular posting in Laboratories
4. Regular posting in other departmental units and Educational Tour to update current medical knowledge
5. Laboratory record – maintenance of observation diary and laboratory record book.
6. Experience in conducting following laboratory investigations for diagnosis of diseases and their methods
 - a) Hematological, Biochemical and Serological measures, Peripheral blood film examination
 - b) Rapid diagnostic techniques.
 - c) Screening test for bleeding disorders- Platelet Count, bleeding time (BT), Clotting time (CT), Prothrombin time (PT).
 - d) Blood grouping - ABO system, Rh typing (Rhesus system)
7. Urine Examination
 - a. Ayurveda anusara mutra pariksha.

- b. Physical Examination, Chemical Examination, and Microscopic Examination
- c. Dipstix examination
- 8. Stool Examination
 - i. Ayurveda anusara purisha pariksha-Physical examination - Sama-Nirama Pariksha
 - ii. Microscopic and macroscopic examination of stool
- 9. Sputum Examination
 - i. Ayurveda pariksha anusara sthivana.
 - ii. Physical, Chemical and Microscopic Examination of the sputum.
- 10. Semen examination
 - 1) Ayurvediya anusara Retas pariksha.
 - 2) Semen examination & clinical interpretation
- 11. Biochemical tests related to various organ panels- Liver, Kidney, Heart, Thyroid, Pituitary and Bones.
- 12. Knowledge of different staining techniques in microbiology.
- 13. Knowledge of Sero-immunological Investigations: RA, Widal test, ASLO titer, ANA, Etc
- 14. Physical, chemical, microscopic, biochemical and bacteriological tests for various kinds of body aspirates
- 15. Knowledge of histopathological techniques.

BEDSIDE PRACTICAL /CLINICAL METHODS

1. Expertise in clinical methods (General and Systemic Examination).
2. Practical knowledge of examination of Roga based on Pancha Nidan.
3. Practical knowledge of instruments used for clinical examination.
4. Practical records of clinical examination of at least 30 long cases in I.P.D.
5. Practical records of clinical examination of at least 50 short cases.
6. Practical knowledge of ECG, USG and Imaging techniques and their clinical interpretation
7. Understanding of various Ayurvedic diagnostic softwares/programmes available like Ayu soft, Rudra, Ayut Nidana etc.

PATTERN OF EXAMINATION

Name of Paper	Hours of training	Marks
Paper I	100	100
Paper II	100	100
Paper III	100	100
Paper IV	100	100
Practicals:	Hospital/Laboratory duties at least 4 Hours per day	Total 200 :
Observation Diary		10
Laboratory record		10
Short Case (including Case Record)		20
Long Case (including Case Record)		30
Laboratory Work		40
Thesis Presentation		40
Viva Voce		50

REFERENCE BOOKS

1. Charaka Samhita with Various Commentaries
2. Madhava Nidana with various commentaries
3. Abhinava Vikriti Vigyana

- Acharya Raghuvir Prasad Dwivedi

- | | |
|---|---|
| 4. Doshakaranatwa Mimamsa | - Acharya P.V. Sharma |
| 5. Nadi Darshan | - Vd. Tara Shankar Mishra |
| 6. Nadi Vigyanam | - Vidyotini Hindi Tika |
| 7. Nadi Vigyan | - Shri Satya Dev Vashisht |
| 8. Nadi Vigyan | - Gangadhar Tika |
| 9. Nadi pariksha | - Vaidya VB Athavale |
| 10. Nadi Pariksha | - GP Upadhyay |
| 11. Rogi Pariksha vidhi | - Acharya Priyavrata
Sharma |
| 12. Roga Vigyan | - Dr. Vinay Kumar |
| 13. Siddanta Nidan | - Gananatha Sen |
| 14. Ayurvediya Roga Vargikaran | - Vd. Ramanath and
Vd. Gurdip Singh |
| 15. Ayurvediya Nidan Evum Chikitsa Ke Siddhanta | - Prof. Ram Harsh Singh |
| 16. Relevant portions of Charak Samhita,
Sushrut Samhita and Vagbhata | |
| 17. Clinical methods in Ayurveda | - K. R . S. Murthy |
| 18. Parameswarappa's Ayurvediya Vikriti Vigyan
and Roga Vikriti Vigyan | - Dr. P.S. Byadgi. |
| 19. Nidan Panchaka | - Prof SC Dhyani |
| 20. Samprapti lakshana yoh sambhandah | - K.Sadashiva Sharma |
| 21. Clinical Diagnosis in Ayurveda in
Roga Nidana and Vikriti Vigyana | - Vaidya Vasant Patil |
| 22. Oxford Handbook of Clinical Examination
and Practical Skills | - Oxford Handbooks |
| 23. Symptoms & Signs in Clinical Medicine | - Chamberlains |
| 24. Clinical Methods | - Hutchinson's |
| 25. Bedside Clinics in Medicine Part- I & II | - Kundu |
| 26. Practical Pathology | - Dr. K. Uma Chaturvedi |
| 27. Medical Laboratory Technology | - R. Sood |
| 28. Clinical Diagnosis and Management by
Davidson | - Todd, Sanford and
Laboratory methods |
| 29. Robbins Basic Pathology | - Kumar, Abbas, Fausto at |
| 30. Text Book of Pathology | - William Boyds. |
| 31. Text Book of Pathology | - Harsh Mohan |
| 32. Text Book of Pathology | - Dey and Dey |
| 33. Text Book of Parasitology | - Ramnik Sood |
| 34. Clinical Pathology and Bacteriology | - S.P. Gupta |
| 35. A Text Book of Microbiology | - Ananthanarayana, Panikar |

9. PRASUTI TANTRA- STREE ROGA

PAPER – I Garbhagarbhini Vigyan

1. Applied anatomy of female Genito urinary system, pelvis and Pelvic floor. Pelvic assesment and foetal skull.
2. Physiology, neuro endocrinology and pathology of puberty and Neuroendocrine control of menstrual cycle.. Artava, Rituchakra, Streebija, Pumbija.
3. Garbha sambhava samaagri, Garbhadhanam, Pre-conceptional counseling and care, Pumsavana, Garbhasya shad dhatvatmakata, Garbhavakranti, Matrijadi bhava, Garbha vriddhi, role of panchamahabhutas in the formation and development of foetus. Garbhasya avayavotpatti, Fundamentals of reproduction – gamatogenesis, Fertilization, Implantation and early development of human embryo.
4. Aparā, Garbhodaka Jarayu, Nabhinadi.
Placenta, amniotic fluid, membranes and umbilical cord -their formation, structure, Functions and abnormalities.
Garbha-poshana, Garbha shareerkriya vaishishtyam, Garbha lingotpatti, Garbha varnotpatti, Garbhasya masanumasika vriddhi.
Foetal physiology, circulation, Foetal growth and development
5. Bija – Bijabhaga – Bijabhagavayava janya garbhanga vikruthi. Genetics, Birth defects and other teratologic abnormalities
6. Garbhini nidana, sapekshanidana, Garbhakalina matrigata parivartana, lakshana, Dauhrida. Diagnosis and differential diagnosis of pregnancy, anatomical and physiological changes during pregnancy, Endocrinology related to pregnancy, Immunology of pregnancy.
7. Garbhiniparicharya, Masanumasika Pathya Apathya evum Garbha upaghatakara bhava. Ante Natal care, examination investigations and management,.
8. Garbhasankhya nirnay, Bahu apatyata, Multiple pregnancy.
9. Garbhavyapad - causes, clinical features, complications, management and treatment of Garbhasrava and Garbhapata , Upavishtaka, Nagodara / Upashushka, Lina garbha, Goodagarbha, Jarayu Dosha, Antarmrita garbha , Garbha shosha, Garbha kshaya, Bhutahrta garbha, Raktagulma.
Abortions, I.U.G.R, Intrauterine Foetal death Ectopic pregnancy and gestational trophoblastic neoplasia,
10. Garbhini vyapad – nidana panchaka and chikitsa of garbhini vyapad.
Early recognition, differential diagnosis and prompt management of pregnancy complications, Emesis and Hyperemesis gravidarium, Anaemia, Pregnancy Induced Hypertension, Pre-eclampsia, Eclampsia, Antepartum hemorrhage, Rh-incompatibility.
Management of pregnancies complicated by medical, surgical or Gynecological disorders in consultation with the concerned specialties by team approach
 - a. Pyrexia, Heart disease, Diabetes mellitus, Liver disorders, Respiratory diseases, Renal diseases, Epilepsy, Hypertensive disorders.
 - b. Fibroids, Ovarian tumors, Genital prolapse, Carcinoma Cervix.Infections in pregnancy:
Toxoplasmosis, Viral infections ,Rubella, CMV, Hepatitis-B, Herpes, Syphilis and other Sexually Transmitted Infections including HIV, Prevention of mother to child transmission of HIV infection (PMTCT).
11. Jataharini related to garbhini avastha
12. Evaluation of Foetal and maternal health in complicated pregnancies by making use of diagnostic modalities.
13. Prenatal diagnosis of fetal abnormalities and appropriate care. PNDT Act and its Implications.
14. Vishesh adhyayan of –

Ashtanghriday sharira	-	Adhyay	-1 st – Garbhavkranti
Sushrutasamhita sharira	-	Adhyay	-3 rd – Garbhavkranti
Charak Samhita sharira	-	Adhyaya	- 8 th Jatisutriya

PAPER – II Prasava – Vigyan

Prakrit prasav

1. Prasav paribhasha, Prasav kaal, Prasava prarambha karana, Prasava kalina garbha sthiti, Avi, Sutikagara.
 - a) Initiation and onset of parturition.
 - b) Examination and evaluation of patient in labour.
 - c) Physiology of labour.
 - d) Mechanism of labour.
 - e) Selection of place of delivery and labour room.
2. Prasava avastha evum paricharya
 - a) Stages of normal labour
 - b) Intrapartum maternal and foetal monitoring
 - c) Management of normal labour

Prasava vyapad

1. Etiopathogenesis, clinical features, prevention and management of Garbhasanga, vilambita prasav, Mudhagarbha and Aparasanga.
 - a. Prolonged labour
 - b. Cephalo pelvic disproportions
 - c. Malpresentation
 - d. Obstructed labour
 - e. Methods of Induction and Augmentation of labour
2. Complications of different stages of labour
3. Obstetric management of high risk Pregnancies- Pre eclamptic toxemia, Eclampsia, Diabetes, cardiac disease, asthma, Epilepsy, ante partum haemorrhage, preterm premature rupture of membranes, , Preterm, Post term, Multiple pregnancy, IUGR & HIV -AIDS
4. Still birth- diagnosis, complications and management.

Jatamatra/ Navajata shishu paricharya

1. Examination and management of neonate.
2. Management of birth asphyxia.
3. Detection of congenital malformation in newborn and timely referral for correction.

Sutika vigyana

1. Sutika Paribhasha, kala maryada, paricharya.
2. Sutika vyadhi and their chikitsa.
3. Stana sampat, Stanya utpatti, Stanya sampat, Stanya pariksha, Stanya vriddhi, kshaya and dusti karana, lakshan and its Chikitsa, stana shotha, stana vidhradhi.
4. Suppression of lactation
5. Normal and abnormal puerperium.

Obstetric shock and management

1. Raktadhana: blood transfusion and replacement of blood constituents.
2. Management of fluid and electrolyte imbalance in obstetrics.

Drugs used in obstetric practice, indications/contra indications, doses and side effects.

Vishesha Adhyayana of –

Ashtanga Hridaya Sharira Sthana 2nd Adhyaya – Garbha vyapad

Sushruta Samhita Nidana Sthana 8th Adhyaya – Mudhagarbha nidana

Sushruta Samhita Chikitsa Sthana 15th Adhyaya – Mudhagarbha Chikitsa

PAPER – III Stree Rog vigyan

1. **Disorders of menstruation and Female reproductive system.**
 - A) Congenital malformations of female genital tract
 - B) Artav dushti, artava vriddi, artava kshaya, asrigdara, anartava, and kashtartav.
 - C) Genital infections including sexually transmitted infections.
 - D) Abnormal vaginal discharges.
 - E) Arsha, Yonikanda, Gulma, Granthi, Arbuda.
 - F) Abnormal uterine bleeding, Endometriosis, fibroid uterus, Adenomyosis, Polycystic ovarian syndrome and neoplasia of female genital organs.
 - G) Endocrinological disorders affecting female reproductive system.
 - H) Somarog.
2. **Detailed study of yoni vyapad mentioned by different Acharyas with their commentaries and all possible correlations with modern gynecological diseases.**
3. **Vandhyatva**
 - A) Hetu, Bheda, Pariksha, and Chikitsa.
 - B) Detailed study of causative factors, Investigations with recent advances in management of infertility, Adoption law.
4. **Stanaroga**

Detailed study of Stanashotha, Stanakilaka and stanavidradhi, stana granthi, stanarbuda.
Examination of breast, diagnosis and differential diagnosis of breast lump.
5. **Measures of contraception**
 - A) Ayurvedic view of Garbha nirodha and Garbhapatkara yogas.
 - B) Temporary Contraception
 - C) Recent studies in the field of contraception.
 - D) National Health programme to improve maternal and Child health, social obstetrics and vital statistics (maternal and perinatal mortality).
6. **Sthanik chikitsa**

Detailed study of Pichu, Varti, Dhupan, Dhavana, Parisheka, lepa, Kalkadharana, Uttarabasti, agnikarma and kshara karma.
7. **Rajo Nirvritti** - Climacteric and menopause.
- Geriatric health care
8. **Study of modern diagnostic techniques and Investigations.**
9. **Important drugs used in Streerog.**
10. **Panchakarma in streerog**
11. **Vishesha Adhyayana of –**

Charaka Samhita Chikitsa Sthana – 30th Adhyaya - Yonivyapad Chikitsa
Sushruta Samhita Uttara Tantra - 38th Adhyaya – Yonivyapad Pratishedha
Kashyapa Samhita Kalpa Sthana - Shatapushpa Shatavari, Lashuna kalpa Adhyaya

PAPER – IV Prasuti–Streerog-Shalya Karma

General principles of Gynecological and Obstetric Surgeries. Analgesia and Anaesthesia in Obstetrics and Gynaec operative procedures.

Operative Obstetrics

Decision making, techniques, diagnosis and management of surgical complications.

Dilatation and evacuation, Hysterotomy, Provision of safe abortion services –selection of cases, technique and management of complications, septic abortion, criminal abortion, MTP Act.

Cervical encirclage.

Instrumental delivery (Forceps, vacuum extraction), Caesarean Section, Manual removal of Placenta, Caesarean Hysterectomy.

Operative gynecology

Selection of cases, technique and management of complications of minor and major gynecological procedures.

Dilatation and Curretage, Cervical cauterization.

Polypectomy, Myomectomy, Cystectomy, Oophorectomy.

Surgical sterilization procedures.

Hysterectomy.

Surgical procedures for genital prolapse.

Surgical management of benign genital neoplasm.

Recent advances in Gynaecology and obstetrics – Diagnostic and therapeutics

Shock and its management, Blood Transfusion, Fluid and electrolyte imbalance, Fluid therapy.

Record keeping, ethical and legal issues involved in obstetrics and gynaecology.

Medico-legal aspects – ethics, communication and counselling in obstetrics and Gynecology

Intensive care in Obstetrics and Gynecology.

Content of Practical

1. Practical training to conduct
 - Normal and Complicated deliveries
 - Assisted/ Instrumental deliveries
 - Caesarean Section
 - Neonatal resuscitation
2. Practical knowledge of grabhini pricharya, sutika pricharya and masaanumasik garbha vridhhi.
3. Practical training to perform obstetrical and Gynaecological Surgery
4. Practical training to provide family welfare/ Planning services, safe abortion methods along with surgical sterilization.
5. Practical knowledge and practice of all relevant equipment, Procedures, complications, Emergencies with their management.
6. Practical knowledge of Yogasanas and pranayam useful in Stree rog and Prasuti tantra.
7. Practical knowledge of Panchakarma and Sthanik Chikitsa used in Stree Rog and Prasuti Tantra.
8. Practical Knowledge of recent advances in Gynaecology and obstetrics.

Pattern of Practical Examination

- | | |
|--|------------|
| 1. Practical Record Book | - 20 Marks |
| 2. Bed side examination | |
| Short Case | - 20 Marks |
| Long Case | - 40 Marks |
| 3. Identification of the Instruments/x-ray/USG plate | - 20 Marks |
| 4. Thesis Presentation | - 50 Marks |
| 5. Viva Voce | - 50 Marks |

Reference Books-

1. Related matter from all the samhitas and their commentaries.
2. Prasuti tantra evum stree roga by prof Tewari P V
3. Concepts of gynecology Dr Nirmala G Joshi.
4. Prasuti Tantra Prof. M. Dwivedi
5. Stree roga vigyan - Dr VNK Usha
6. Navya prasuti Vigyan Dr Pooja Bharadwaja
7. Text book of gynaecology-Berek and Novak.
8. Text book of obstetrics- Williums
9. Text book of obstetrics- D C Dutta
10. Text book of gynaecology - D C Dutta
11. Gabbe's normal and problem pregnancies.
12. Human embryology by Saddler.
13. Jeffcoat's principles of gynaecology
14. Te linde's gynaecological surgery.

10. KAUMARBHRITYA-BALA ROGA

PAPER – I Bija, Garbha Vigyaniya (Human Genetics, Embryology)

Marks: 100

A. Prakrita Bija-Bijabhaga-Bijabhagavayava evam Tadjanya Vikriti (Genetics and related disorders)

1. Ayurvedic genetics with modern interpretations: Shukra, Shonita, Shukra Shonita Doshas, Bija-Bijabhaga-Bijabhagavayava Vikriti, Matrija and Pitraja Bhavas, Yajjah Purushiya and Atulyagotriya; Measures for obtaining good progeny.
2. Modern genetics
Basic concepts:
 1. Cell, cell division, nucleus, DNA, chromosomes, classification, karyotype, molecular and cytogenetics, structure of gene, and molecular Screening.
 2. Human Chromosomes - Structure, number and classification, methods of chromosome preparation, banding patterns.
 3. Single gene pattern inheritance: Autosomal & Sex chromosomal pattern of inheritance, Intermediate pattern and multiple alleles, Mutations, Non Mendelian inheritance, mitochondrial inheritance, Genomic imprinting, parental disomy.
 4. Criteria for multi-factorial inheritance.

Pathogenesis

1. Pathogenesis of chromosomal aberrations and their effects, recombinant DNA, genetic inheritance, inborn errors of metabolism
2. Chromosomal abnormalities: Autosomal & Sex chromosomal abnormalities, syndromes
3. Multifactorial pattern of inheritance: Teratology, Cancer Genetics – Haematological malignancies, Pharmacogenetics.
4. Chromosomal disorders
5. Chromosomal aberration (Klinefelter, Turner and Down's syndrome)
6. Genetic Counseling, Ethics and Genetics.

B. Prakrita Bija-Bijabhaga-Bijabhagavayava evam Tadjanya Vikriti (Genetics and related disorders)

1. Garbha (embryo), Garbhawastha (gestation period), sperm, ovum; spermatogenesis; oogenesis; structure of ovum
2. Sperm in the male genital tract; sperm in the female genital tract, activation and capacitation of sperm.
3. Garbha Masanumasika Vriddhi evam Vikasa (Ayurvedic and modern concepts of Embryo and Fetal development)
 - First week of development
 - Second week of development
 - Third week of development
 - Fourth to eighth week of development (Embryonic period)
 - Development from third month till birth (Fetal period)
4. Formation of Prakriti, their assessment in children viz. Bala, Kumara, Yauvana; Pathya-Apathya according to Prakriti.
5. Aparā (Placenta) Aparā Nirmana (Formation of placenta), Aparā Karya (Functions of placenta); Aparā Vikara (Placental abnormalities)
6. Nabhinadi (Umbilical Cord)
Formation and features of umbilical cord
7. Garbha Poshana (Nutrition- from conception to birth)
8. Yamala Garbha(twins)

9. Garbha Vriddhikara Bhavas, Garbhopaghatkara Bhavas.
10. Effect of maternal medication, diet and illness over fetus.
11. Teratology including defects of bija, atma karma, kal, ashaya etc.: causative factors for teratogenicity, mode of actions of teratogenes, critical periods
12. Perinatal Care and Perinatal complications
13. Scientific study of Jataharini specific to children.
14. Prenatal diagnosis
15. Samanya Janmajata Vikara (Common congenital anomalies of different systems): Sahaja Hridaya Vikara (Congenital Cardiac Disorders) Jalashirshaka (Hydrocephalus), Khandaoushtha (cleft lip), Khanda-Talu (cleft palate), Sanniruddha Guda (Anal stricture / imperforated anus), Pada-Vikriti (Talipes equinovarus and valgus), Tracheoesophageal Fistula (TOF), Spina bifida, Meningocele, Meningomyelocele, Pyloric Stenosis.

PAPER-II Navajata Shishu Vigyan evam Poshana

Marks: 100

PART-A

1. Navajata Shishu Paribhasha, Vargikarana (Important definitions and classification related to neonates.)
2. Navajata Shishu Paricharya evam Prana-Pratyagamana (Care of the newborn including recent methodology for the resuscitation)
3. Samanya Navajata Shishu Paricharya (General Neonatal Care –Labour room onwards)
4. Samaya purva evam Samaya pashchat Jata Shishu Paricharya (Management of preterm, post term and IUGR newborn)
5. Prasava Kalina Abhighataja Vyadhi (Birth injuries): Upashirshaka (Caput , cephalohematoma), Bhagna (Fractures), Mastishkantargata Raktasrava (ICH, IVH, Subdural hemorrhage)
6. Navajata Shishu Parikshana (Examination of new born): Ayu Parikshana (including Lakshanadhyaya) Modern approach of Neonatal Examination including gestational age assessment
7. Kumaragara: Navajata Shishu Kaksha Prabandhana (Nursery management), NICU, Nursery plan, staff pattern, medical records, Visankramnikarana (sterilization), Knowledge of equipments used in nursery.

PART-B

8. Navajata Shishu Vyadhi (Early neonatal disorders): Hypothermia, Shvasavarodha (Asphyxia Neonatorum/Respiratory distress), Ulvaka (Aspiration pneumonia), Rakta Vishamayata (Neonatal septicemia), Kamala (Neonatal Jaundice), Akshepaka (Neonatal convulsion), Pandu (Anemia), Atisara (Diarrhea), Asamyaka Nabhinal kartanjanya vyadhi.
9. Navajata Kshudra Vikara (Minor neonatal ailments): Chhardi (Vomiting), Vibandha (constipation), Udara shul (Infantile colic), Puya Sphota (Pyoderma), Shishu Netrabhishyanda (Ophthalmia neonatorum).
10. Sadyojatasya Atyayayika Chikitsa (Management of neonatal emergencies): Shock, Fluid and electrolyte imbalance, Convulsion, Hemorrhagic diseases of Newborn etc.
11. Procedures: Shiro-Pichu, Abhyanga, Parisheka, Pralepa, Garbhodaka Vamana (Stomach wash), Ashchytana Neonatal resuscitation techniques, Blood sampling, Intravenous canulation, Umbilical vein catheterization, Bone marrow aspiration, Phototherapy, Naso-Gastric tube insertion, Urethral catheterization, Exchange blood transfusion, Thoracocentesis, Bone marrow infusion, Lumbar puncture
12. Nutrition:
 - A. Navjat Shishu Ahara (Neonatal feeding):

1. Specific Feeding methodology as per Ayurveda and recent advances; Day to day fluid, milk, caloric requirement for the newborn, feeding technique for the preterm baby.
2. Stanyotpatti and Prasruti (Lactation physiology), Stanya Samghatana (Composition of breast milk), Stana Sampat (Characteristics of normal breast), Stanya Sampata evam Mahatva (Properties & importance of pure milk), Stanya-Piyusha (Colostrum); Stanya-Pana-Vidhi (Method for breast milk feeding), Stanyakshaya / Stanyanasha (Inadequate production and absence of breast milk), Stanya parikshana (Examination of breast milk), Stanyabhava Pathya Vyavastha (Alternative feeding methods in absence of breast milk), Various feeding methods, TPN(Total Parenteral Nutrition)
3. Stanyadosha (Vitiating of Breast milk), Stanya Shodhana (Purification of breast milk), Stanya Janana and Vardhanopakrama (Methods to enhance breast milk formation)
4. Dhatri (Wet nurse): Dhatri Guna and Dosha (Characteristics of Wet nurse), Concept of Breast Milk Banking.
5. Lehana (Elucturies)

B Bala-Poshana (Child Nutrition):

6. Daily requirements of nutrients for infant and children
7. Common food sources
8. Satmya and Asatmya Ahara (Compatible and incompatible diet)
9. Pathya evam Apathya Ahara (Congenial and non-congenial diet)
10. Stanyapanayana (Weaning)

PAPER-III Balrog (Pediatric Disorders)

Marks: 100

PART-A

1. Pranvaha Srotasjanya Vyadhi (Respiratory disorders)- Kasa (Cough), Shvasa (Respiratory distress Syndrome), Tamaka Shwasa (Childhood Asthma), Bronchiolitis, Shvasanaka Jwara (Pneumonia- bacterial, viral etc) Rajyakshma (tuberculosis), Vaksha-Puyata (Pyothorax), Vaksha Vata-Purnata (Pneumothorax)
2. Annavaha Srotasjanya Vyadhi (Gastrointestinal disorders): Jwar (Fever), Chhardi (Vomiting) Ajirna (Indigestion), Kshiralsaka, Atisara (Diarrhea), Pravahika, Vibandha (Constipation), Udarshula (Pain in abdomen), Guda bhramsh (Rectal prolapse)
3. Rasa evam Raktavaha Srotasjanya Vyadhi (Hematological and circulatory disorders): Pandu (Anemia and its various types like Nutritional, haemolytic etc.) and , Raktapitta (Bleeding disorders), Vishishta Hridrog (Specific cardiac diseases- RHD etc), Hypertension, Leukemia.
4. Mamsavaha Srotasjanya Vyadhi: Myopathies
5. Mutravaha srotasjanya Vyadhi (Urinary System disorders): Vrikkashotha (Glomerulonephritis and nephrotic syndrome), Mutrakriccha (Dysuria), Mutraghata (Anuria),
6. Vataavaha Sansthanjanya Vyadhi (Nervous system disorders): Apasmara (Epilepsy), Mastulunga-Kshaya, Mastishka-Shotha (Encephalitis), Mastishkavrana-Shotha (Meningitis),
7. Pediatric disabilities and Rehabilitation: Cerebral palsy, Ardita (Facial paralysis), Pakshavadha (Hemiplegia), Ekangaghata (Monoplegia), Adharanga Vayu (diplegia), Amavata (Juvenile Rheumatoid arthritis)
8. Manovaha Srotasa Vyadhi: Breath holding spell, Shayya mutra (Bed wetting), Autism, ADHD (Attention Deficit and hyperactive disorders), Learning Disability, Mental retardation, Temper tantrum, Pica.

PART-B

9. Antahsravi evam Chayapachayajanya Rog (Endocrine and Metabolic disorders)

10. Kuposhanjanya Vyadhi (Nutritional disorders): Karshya-Phakka-Balshosha-Parigarbhika (PEM and allied disorders), Vitamin-mineral and trace elements deficiency disorders, Hypervitaminosis,
11. Krimi evam Aupsargika Rog (Infestations and Infections): Krimi (Giardiasis and intestinal helminthiasis, Amoebiasis) Common bacterial, viral infections with special reference to vaccine-preventable diseases: Rohini (Diphtheria), Whooping cough, Aptanaka (Tetanus including neonatal tetanus), Romantika (Measles), Karnamula Shotha (Mumps), Rubella and Masurika (Chickenpox), Antrika Jwar (Typhoid and Paratyphoid), Viral Hepatitis,; Vishama Jwar (Malaria) and Kala-azar, Dengu fever, HIV (AIDS), Poliomyelitis, Mastishkavaran Shotha (Meningitis), Mastishka Shotha (Encephalitis), Chickengunia
12. Tvaka Vikara (Skin disorders): Ahiputana (Napkin Rashes), Shakuni (Impetigo), Sidhma, Pama, Vicharchika, Charmadal (Infantile atopic dermatitis), Gudakutta.
13. Anya Vyadhyi (Miscellaneous disorders): Jalodar (Ascites), Gandamala, Apachi (Cervical lymphadenitis), Kukunakadi Akshi Rog, Hodgkin & non-Hodgkin Lymphoma, Abnormal growth patterns, Short stature, Niruddha prakash (Phimosis), Paridagdha Chhavi, Utpullika
14. Samghata- Bala Pravrita Rog (damstra): Dog bite. Snake bite, Scorpion bite etc
15. Atyayika Balarog Prabandhana (Pediatric emergency management): Shock and Anaphylaxis, Fluid and electrolyte management, Drowning, Foreign body aspiration, Status epilepticus, Acute hemorrhage, Acute renal failure, Febrile convulsion, Status asthmaticus, Burn, Acute Poisoning
16. Balagraha: Scientific study of Graha Rogs
17. Life Style disorders

PAPER-IV Kaumarabhritya in Ancient Classics and recent Advances Marks: 100

1. Significant contributions of Kashyapa samhita, Arogya raksha Kalpadrum and other texts /treatises of Ayurveda such as Harita Samhitain the field of Kaumarbhritya including relevant parts from Brihatrai
2. Panchakarma: Principles of Panchakarma [Swedan–Hasta–Pata sweda etc], and their application in pediatric practice in detail.
3. Update knowledge of clinical pediatrics including recent researches in Kaumarbhritya.
4. Fundamentals of Hospital management with special emphases on Pediatric Ward.

Practical/ Clinical Exposure for (Record of exposures to be produced at the practical examination)

1. Full term, preterm, post term new born baby care
2. Practical procedures like – phototherapy, premature baby care, KMC, venepuncture, cord blood sampling, stomach wash, suction, resuscitation, etc.
3. Practical skill of Pediatric Panchakarma procedures
4. Child Health Check up
5. IQ Assessment of Children
6. Exposure to National Health Programs related to Children, including Immunization Program.
7. Patient case Records (50 Records)
8. Practical knowledge of modern diagnostic (invasive & non invasive) tools and techniques used in pediatrics.
9. Management of common pediatrics emergencies.
10. Participation in UG teaching/training from UG syllabus via A-V aids (minimum-3)
11. Minimum 15 days compulsory reciprocal exposures in Kaumarbhritya department of other institution during the study period.
12. Participation in National/international seminars
13. Publication/acceptance of two research papers in indexed/peer reviewed/ISSN journals from the dissertation.

Pattern of practical examination:

- | | |
|--|-----------|
| 1. Case record | -15 Marks |
| 2. Bed side examination | |
| a) Short Case | -15 Marks |
| b) Long Case | -25 Marks |
| 3. Identification of instruments/ spotting | -10 Marks |
| 4. Lecture/Dissertation Presentation | -10 Marks |
| 5. Viva-voce | -25 Marks |

Reference Books

1. Kashyapa Samhita Complete Hindi translation by Satyapal Vidhyalankara English translation by Prof. Premvati Tiwari
2. Principles & practice of Pediatrics in Ayurveda: CHS Shastry
3. Child Health Care in Ayurveda: Abhimanyu Kumar
4. Ayurvedic Concepts of human Embryology: Abhimanyu Kumar
5. Kaumarbhritya by Prof. D.N. Mishra
6. Kaumarbhritya Ke Antargata Balgraho Ka Kramika Evam Vaigyanika Adhyana by Prof. Chanchal Sharma
7. Notes on Kaumarbhritya-by Dr. Dinesh K S
8. Pran - Pratyagamanam-by Dr. B.M. Singh
9. Ayurveda Dwara Matra Evam Shishu Paricharya by Dr. KS Patel, V.K. Kori & Rajgopal S
10. Kaumarbhritya related references from Charaka Samhita, Sushruta Samhita Vagbhata etc.
11. Clinical Methods in Paediatrics by Meharban Singh
12. Pediatrics Emergencies by Meharban Singh
13. Essential Pediatrics O.P. Ghai
14. Text Book of Pediatrics Nelson
15. Care of New Born by Meharban Singh

11. KAYACHIKITSA

PAPER- I Fundamentals of Kayachikitsa

100 marks

1. Rogi-Roga Pariksha: Nidan Panchak, Trividha pariksha, Ashtavidhpariksha, Dashvidhpariksha in the light of recent advances. Clinical methods-Detailed history taking and patient examination, Systemic examination as per ayurveda and recent advances.
2. Interpretation of common investigations: ECG, Echo cardiography, TMT, Spirometry, X-ray, USG, CT-Scan, MRI, EEG, EMG, in different pathological conditions.
3. Detailed Knowledge of Principles of Chikitsa in Ayurveda. Types of Chikitsa. Principles and practices of Rasayana and Vajikarna.
4. National Health Programmes and prospective role of Ayurveda services and therapeutics in them.
5. Medical ethics, Common laws and regulations applicable to clinical practice.
6. Elaborate knowledge of undertaking common medical procedures like Ryle's tube feeding, tapping, transfusions, catheterization, tractions.
7. Ayurveda Dietetics: importance of Pathya, Apathya and Anupana.
8. Drug-drug interactions and adverse drug reactions, Iatrogenic disorders.

PAPER – II Samanya Roga Chikitsa

100 marks

Nidana/ Chikitsa including Nidana Parivarjana, Pathya, Apathaya, Chikitsa siddhanta, Shamana, Shodhana, Panchakarma, Rasayana and Atyayika Chikitsa (Anupana, Drug/Non-drug) as per Ayurvedic and conventional therapeutics of following Srotogata vyadhi:

1. Pranavahasrotas: Shwasa, Hikka, Kasa, Rajayakshma, Hridroga, Parshwashoola, Urakshata, Svarabheda
Cardio-respiratory system: Bronchitis, Bronchiactasis, Bronchial asthma, COPD, Cor-pulmonale, Pneumonias, Occupational lung diseases, Pulmonary tuberculosis, Congenital Heart disorders, IHD, RHD- Valvular diseases, Cardiac failures, Cardiomyopathy, Pericarditis, Endocarditis, Hypertension,.
2. Annavahasrotas: Agnimandya, Ajirna, Aruchi, Amadosha, Amlapitta, Chhardhi, Shoola, Grahani.
Gastrointestinal disorders: GERD, APD, Malabsorption Syndrome,
3. Udakavahasrotas: Trishna, Shotha, Udararoga, water and electrolyte imbalance
4. Rasavaha srotas: Jwara, Amavata, Pandu, Madatyaya, Anaemias, Rheumatoid arthritis, Substance abuse disorders.
5. Raktavaha Srotas: Raktapitta, Kamala, Vatarakta, Kushtha, Kshudraroga, Sheetpitta, Udarda, Kotha, Visarpa, Shvitra. Haemopoeitic disorders, Bleeding and Coagulation disorders, Leukaemias, Thrombocytopenia, Disorders of Bone Marrow, Hepatobiliary disorders, Hepatitis, Cirrhosis, Cholecystitis, Liver abscess, Jaundice, Dermatological disorders, Parasitic, Infective, Allergic, Autoimmune skin disorders, Eczemas,
6. Mamsa-Medovahasrotas: Medoroga, Sthaulya, Prameha, Galaganda, Gandamala, Urustambha, Diabetes mellitus, over weight .
7. Asthi-Majjha vahasrotas: Asthikshaya, Sandhigatavata, Osteoarthritis, Osteopenia
8. Shukravahasrotas: Such as Kalibya, Dwajabhanga. Impotence
9. Mutravahasrotas: Mutrakricchra, Mutraghata, Ashmari, Urinary disorders: UTI, Lithiasis, ARF, CRF, Uraemia, BPH.
10. Purishvaha srotas: Atisara, Pravahika, Anaha, Adhamana, Krimi, Udavarta, Enteritis, Dysenteries, Ulcerative colitis, IBS, Worm infestation.

PAPER – III Vishishta Roga Chikitsa

100 marks.

Comprehensive knowledge of etiology, demography, pathogenesis, symptomatology, complications, investigations, diagnosis and drug/non-drug management of following diseases as per Ayurveda/ Conventional therapeutics:

1. Vata-Vyadhi- Pakshavadha, Adharanga Vata, Sarvanga Vata, Ananta Vata, Gata Vata, Gridhrasi, Ardita, Akshepaka, Apatantraka, Ekangvata, Vishvachi, Avabahuka, Avarana.
Musculoskeletal disorders: Myopathies, G B Syndrome, Muscular dystrophies, Lumbago
Neurological disorders: Neurodegenerative disorders like Alzheimer's, Parkinsonism, CVA, Neuropathies, Facial palsy, Motor Neuron Diseases, Epilepsy, Sciatica.
2. Sankramakroga: Sheetala, Masoorika, Updansha, Phiranga, Gonorrhoea, Chancroids, Syphilis,
3. Manasa vyadhi; Unmada, Apasmara, Atatvavinivesha, Mada, Moorcha, Sanyasa.
Common psychiatric disorders: Classification of psychiatric ailments. Disorders of thought like Schizophrenia. Disorders of Mood like Mania, Depression. Neurosis, personality disorders, psychosexual disorders.
4. Metabolic disorders: Gout, Dyslipidaemia, Atherosclerosis, Obesity.
5. Endocrinal disorders; Disorders of Pituitary, Thyroid, Adrenal Medulla, Reproductive hormones.
6. Parasitic/Infective/Communicable disorders: Shlipada, Filariasis, Vishama Jvara, Malaria, Manthara Jwara, Enteric Fever, Dengue, Chickenpox, Measles, Influenza, Kalaazar, Mumps, Rabies, Poliomyelitis, Plague, Meningitis, Encephalitis, Chickungunya, HIV/AIDs, Common worm infestations.
7. Common neoplastic disorders and their management strategies. Role of Ayurveda medicines in cancer care including palliative care.
8. Autoimmune diseases: Myopathies, Rheumatic fever, SLE.
9. Common poisonings and their management like Insecticide/Pesticide poisoning, Snake poisoning, Vegetable and chemical poisoning.
10. Janapadodhvasa Vikara. Environmental diseases and their management.

PAPER – IV Advances in Kayachikitsa

100 Marks.

Critical care medicine, Management of medical emergencies, ICU services, Field medical services

1. Hospital management strategies, Infrastructure, use of IT technology, essential manpower, equipment, Patient care, management and coordination with contemporary health institutions and field institutions.
2. National Health Campaigns of AYUSH and components under NRHM.
3. Clinical Research in Kayachikitsa and its application in clinical medicine as per new evidence base in different systemic disorders.
4. New emerging health challenges and ayurvedic medicines: Chickangunya, HIV/AIDs, Swineflu, Chickenflu, Dengue, Restless leg syndrome, Sick building syndrome, Fibromyalgia.
5. Role of Ayurveda in immune-protection, immuno-modulation and in management of other allergies and immunological disorders.
6. Indications and importance of Organ transplantation, Ethical and legal issues involved.
7. Knowledge of Geriatric care and terminal care medicine.
8. Basic knowledge of Gene therapy, Stem cell therapy, Genetic modeling and chromosomal disorders in different disease conditions.
9. Radio-isotopes, disease and tumor markers in diagnosis and assessment of therapy.
10. Scope and methods of independent and collaborative research in Kayachikitsa.
11. Disaster management strategies.
12. Application of advances in Rasayana and Vajikarana therapies
13. Application of emerging trends in Panchakarma in medical management.
14. Physical medication and rehabilitation.

PRACTICALS

Practicals shall be held to evaluate the patient care, diagnostic and treatment expertise of the student. It should also be taken as a chance to evaluate the clinical skills.

Clinical Ability Evaluation-60 marks based on

- | | |
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| 1. Case records of 40 IPD Patients in Detail | 10 marks |
| 2. Long case History-1: | 20 Marks |
| 3. Short Case history-1 : | 10 Marks |
| 4. Medical procedures demonstration/ Panchakarma procedure | 20 Marks. |
- Academic Competence evaluation- 40 marks based on:
- | | |
|---------------------------------------|-----------|
| 1. Viva | 30 Marks. |
| 2. Teaching and communication skills: | 10 Marks. |

Reference Books

1. Relevant portions of Brihatrayi and Laghutrayi with commentaries
2. Cikitsadarsha- Pandit Rajeshvar Dutta Shastri
3. Kayachikitsa - Ramaraksha Pathak
4. Rog Pariksha Vidhi - Priyavrat Sharma
5. Panchakarma Vigyan - Haridas Sridhar Kasture
6. Ayurvediya Nidana- Chikitsa Siddhanta - Prof. R.H.Singh.
7. Kayachikitsa Vol. 1 and 2 - Prof. R.H.Singh.
8. The Holistic Principles of Ayurvedic Medicine - Prof. R.H.Singh.
9. Essentials of Kayachikitsa -II, Vol. 1 - Dr. Aruna
10. Kayachikitsa Vol. I-IV. - Prof. Ajay Kumar
11. Panchakarma Therapy - Prof.R.H.Singh
12. Panchakarma Illustrated -Prof.G.Shrinivasa Acharya
13. Practice of Ayurvedic Medicine(Kayachikitsa) -Prof.A.K.Tripathi
14. Nidanachikitsa Hastamalaka - Prof. R.R.Desai
15. Clinical Methods in Ayurveda - Prof. K.R. Srikantamurthy
16. Aushadhi Gunadharm Shastra - Gangadhar shastri Gune
17. Introduction to Kayachikitsa - Prof. C. Dwarakanath
18. Samprapti lakshnanayoh Sambandhah - Prof.Sadashiv Sharma
19. Nidana Panchak - Prof.S.C.Dhyani
20. Kayachikitsa - Prof.S.C.Dhyani
21. Davidson's Principles and Practice of Medicine.
22. API Text Book of Medicine.
23. Harrison's Text Book of Medicine.
24. Cecil Text Book of Medicine.
25. Relevant texts of concerned subjects.

12. MANOVIGYAN AVUM MANASAROGA

PAPER-I Manovyapara Evam Manovigyanam

Marks 100

1. Prachya - arvachya matanusara Mano vighyanasya Bhutavidyayah, Amanusha tatha Grahadinam parichaya, setihasa.
2. Prachya arvachya matanusara Manasah Nirupanam-Concept of Manas from Ayurved and modern perspective.
3. Vividha darshananusara Manasah varnanam.-concept of mind in various philosophies.
4. Manasah Svarupam – Structure of mind, Manasah Sthanam- Location of mind, Manovishayah- Objects of mind, Manogunah (Anutva and Ekatva) –Attributes of mind- Minuteness and oneness, Manasah Ubhayatmakatvam-Duality of Manas, Manasah Dravyatvam Karanatvam cha- mind as a substance and tool,Manasah Karanadravyatvam-mind as causative substance,Manodoshah- (Rajas and Tamas),Manasah Bhoutikatvam- Elemental nature of Manas Introduction to concept of Buddhi and Ahamkara - intellect and ego, Manasah Ahamkarikatvam –origin of mind from ego (samkhya),Manasah Annamayatvam- Relationship between food and mind,Manasah trigunatmakatvam(Sattva,Rajas, Tamas)- mind and the three major attributes,Manasah jadatvam- inertia of mind, Manasah dhatutvam-mind as a component of living being, Manasah Karma- Actions of Manas.
5. Manovyapara Nirupanam.
6. Manovyapare Pranodana sadhaka Bodhakadi Doshanam Sambandhah-Relation of humoral fractions such as Prana, Udana, Sadhaka- Bodhaka in the activity of Manas, Concept of Ojas and Manas
7. Katham prakopayanti ManoDoshah SharirDoshan?- How does manasika Doshas aggravate sharirika Doshas?
8. Indriya panchapanchakam- five factors in relation to the mental faculties.
9. Gyanendriyanam vishayah- the objects of sense faculties.
10. Gyanotpatti prakriyayam Manaso pradhanyam- Importance of Manas in cognitive process.
11. Indriyarthagrahananantaram Manasah vyapara avum gyanotpattou manaso dayitvam - Action of Manas in cognition after reception by respective Indriya.
12. Knowledge of Dirgha Shashkuli nyaya, Alata-chakra nyaya, Vichi-taranga nyaya, Kadamba-mukula nyaya.
13. Shabda – sparsha – rupa – rasa – gandhanam grahakam manah, tasya mahatvam cha - Manas as conductor of sense objects and its importance.
14. Vayuh indriyanam udyojakah tatha Manasah preranam -Vayu as stimulator of indriya and initiator of manas.
15. Vakpravrittou Manasah yogadanam - Role of Manas in production of speech.
16. Pratisharire Manasah bhinnatvam - Concept of individuality of mind.
17. Chikitsya purushah- treatable person (living being).
18. Atma nirupanam- description of Atma, Sukshma sharirsya varnanam- description of subtle body, Atma manasoh sambandhah- relation between Manas and Atma.
19. Antah karana chatusthaya (the four internal faculties).
20. Importance of Dhi, Dhriti and Smriti- importance of intellect, retention power and memory.
21. Role of manas in achieving Tri eshana and Chaturvidha Purushartha/chatur varga- role of manas in attaining the pursuits and four goals of life.
22. Concept of Satyabuddhi, Ritambhara Pragya and Upadha- concept of true and false knowledge.
23. Concept of Punarjanma, Purvajanmakrita karma, Karmaphala.
24. Manovaha Srotasam Parichaya– Introduction of Manovaha srotas(channels of mind)
25. Manovaha, Samgyavaha, Buddhivaha, Chetanavaha, Chetovaha, Vatavaha, Raktavaha adi upayukta Srotasam Manasroge varnanam- Description of Manovaha,

- Sangyavaha, Buddhivaha, Chetanavaha, Vatavaha, Raktavaha srotas etc in relation to Manasroga
26. Shatchakra nirupanam.
 27. Sattvasara purusha- person with mental excellence.
 28. Nidravichara- Concept of sleep, Swapna vichara- Concept of dream, Tandravichara – Concept of drowsiness.
 29. Concept of manasprakriti- mental temperament, Concept of Manasa bhava in Shareerika prakriti.
 30. Manasaroge Manovigyane cha upayukta Paribhashika shabdanam vishleshanam- technical terms used in psychology and psychiatry
 31. Manas roge upayukta Samhitanam satika adhyayanam- study of portions of treatises useful in psychiatry along with their commentary.
 32. Arvachina mano vigyanyasya adhishtana siddhantah, mastishka karmanam sthapanam cha-Fundamentals of modern psychology and functions of brain.
 33. Applied Neuro-anatomy and physiology, Neurotransmitters, Psychoneuro immuno endocrinology
 34. Manasah swabhavika pratirodhah - Defence mechanism of mind.
 35. Shishu manas-shastra, vikasatmaka Manas-shastra – Shishu, Bala, Kumarah, Proudah, Vriddhah cha- Essential elements of psychology, developmental psychology: child, adolescence, adult and aged.
 36. Bhava, Sheela, Buddhi, Smriti, Prerakatva adinam gyanam -Concept of Mood, behaviour, attitude, emotions, intelligence, memory, motivation, perception etc.
 37. Manas Swasthya Evam Manoroganam Paribhasha – Definition of Mental Health and psychiatric disorders.
 38. Manasrogvigyanyasya mahatvam, phalam, prayojanam, prabhavashcha

PAPER –II Manovaiikariki Evam Bhutavidya

Marks 100

1. Manovega, Mano vikarah, ManoDoshah, ManaSharirayoh paraspara anuvaidhayitvam- mutual symbiosis of sharir and manas, Manasah chanchalatvam, Manaso vyadhinam ashrayatvam, Manasrogeshu Doshanam paraspara anubandhah, Manasvyadhi utpattou sharirDoshanam vikarakaritam, Indriyadinam hinamithyatiyogah. Prajnaparadha, Purva janma krita karma tatha Papa karmasya rogkarakatvam, Adharmasya Achararasayana upekshanasya cha rogkarakatvam.

Bhutavidya – Definition and scope with applied aspects: Divergent views

1. Types and Characteristic features of Bhuta and Graha, Amanushopasarga Vikara caused by Bhuta and Graha, Aetio-pathogenesis of Bhuta and Graha
2. Relationship of Bhuta with Jwara, Ojakshaya, Manovikara, Arishta Lakshana and Daivabala Pravritta diseases.
3. Grahavesha, affecting time of Graha, their specific features, prodromal features and prognosis.
4. Differential understanding of Balagraha and Grahabadha.
5. Sushrut's concept of invasion of Bhuta/Graha.
6. Manas Rognam Nidan, Sampraptischa
7. Manobuddhyadi Vibhramsha
8. Manas dharaniya vega.
9. Kayika-Vachika-Manasika karma hinamithyati yoga in Manasa roga samprapti.

Manovikriti –Psychopathology

1. Bijapradosha and Kulaja bhava in manas roga -Genetics and hereditary factors in Psychiatry.
2. Manas roganam prachya arvachina matanusarena vargikaranam
3. Classification of manas rogas yatha kevalamanas, manas sharir, shariramanasika, agantuja adayah
4. Understanding of Parapsychology and its role in overt psychiatric disorders.
5. Recent ICD and DSM classification

Manas Rogi pariksha vidhi- Psychiatric examination

1. Prachya arvachina matanusarena rogi pariksha visheshena sattva pariksha – Examination of patient according to Ayurvedic and modern methods
2. Trividha Sattva Pariksha
3. Charakokta Anumana Pariksha
4. Manasika avastha Pariksha - Mental Status Examination
5. Vividha pariksha manakah -Different psychiatric assessment inventories like Hamilton's scale, Bech's Depression inventory etc.
6. Manorog chikitsiya manomapaka upakaranani cha - Psychiatric and psychometric tools for diagnosis, Evidence based diagnostic methods.
7. Prayogashaliya pariksha -Investigations– Haematological, biochemical, neuro-physiological, endocrinal, EEG, radio imaging- MRI etc.
8. Manasrognam sadhyasadhyata – Prognosis of psychiatric diseases.
9. Manas Rog Sandharbhe Vidhi Vaidyakasya vistrita gyanam.
10. Forensic psychiatry- Knowledge about legal and ethical issues in psychiatry, Indian lunacy act, mental health act, Norms to setup a well equipped Mental Hospital (OPD, IPD)

PAPER – III Manas Roga Chikitsa

Marks 100

Comprehensive knowledge of etiology, demography, underlying psycho pathogenesis, symptomatology, complications, investigations, diagnosis, prognosis and drug-non drug management of following psychiatric disorders as per Ayurvedic-Modern therapeutics with their pharmacodynamics:

1. Unmada (Psychoses)- Nija, Agantuja Unmada, Bhutonmada, Vishaja Unmada, Sutikonmada, Smaronmada, Tattvonmada- Paronoia, Mano dukhaja Unmada -Stress related disorders.
2. Apasmara - -seizure disorders
3. Apatantraka – hysterical convulsions
4. Tandavaroga -Chorea
5. Yoshapasmara - conversion disorders
6. Atatvabhinivesha- Obsessive compulsive disorders
7. Vishada- Depressive illness
8. Gadodvega -Hypochondriasis
9. Mada, Murchha, Sanyasa- sensorial disorders
10. Madatyaya, Panatyaya (Panavibhrama, Paramada, Panajirna) - Substance abuse disorders.
11. Nidra vikara (Sleep disorders) , Klama, Tandra, Glani.
12. Bhrama, Vibhrama - Delusional disorders.
13. Chittodvega - Generalized Anxiety disorders.
14. Smriti vikara (memory disorders)
15. Manasika klaibya, Sushrutokta Napumsakata
16. Manasa Dosha Vikara- Kama, Krodha, Lobha, Moha, Irshya, Bhaya, Mana, Mada, Dambha, Ahamkara, Harsha, Matsarya, Iccha, Dvesha.
17. Mood and affective disorders – major depressive disorders, mania and their possible Ayurveda co-relates.
18. Schizophrenia
19. Personality disorders
20. Behavioural disorders
21. Organic mental disorders
22. Post traumatic stress disorders
23. Psycho sexual disorders
24. Eating disorders
25. Somatoform and dissociative disorders

26. Senile psychiatric disorders - Dementia, Alzhiemer's disease, Parkinsonism, Menopause, Andropause and their possible Ayurveda co-relates.
27. Adhi- Vyadhi Roganam Manasika Prabhava Chikitsa Cha - Psychosomatic disorder-- Bhayaja and Shokaja Atisara, Kamaja and Shokaja Jwara, Tamakashwasa, Prameha, Amlapitta, Parinamashula, Grahani, Ucca Raktachapa(Hypertension), Shula (pain disorders), Twak Vikara.
28. Jirna- Asadhya Sopadrava Vyadhinam Vivechanam – Mental problems in chronic incurable diseases like AIDS, Cancer etc.
29. Mano prakriti vikara – psychopathic personality.
30. Jivana Shaili Tatha mano sammarda janya roгах - Life style and stress related disorders.
31. Shishu tatha Kumara Manoroga - Child and adolescent psychiatry.
32. Jadata, Buddhimandya , Adhyayana Akshamata – Mental deficiency, mentally challenged and learning disabilities.
33. Achara vaikalya - Conduct disorders
34. Manobhava vikara - Emotional disorders
35. Cerebral palsy, infantile autism, Attention Deficit Hyperactive disorders, Tourette's disorder with their possible Ayurveda co-relates.
36. Preventive aspects in Manas Roga – Achara Rasayana, Sadvritta, Shodhana, Rasayana and Vajikarana
37. Manas Roganam Samanya Vishesa Chikitsa Siddhantanam Varnanam,- Daiva Vyapashraya, Yukti Vyapashraya, Sattvavajaya, Adravyabhuta Chikitsa Upayah.
38. Sattvavajaya Chikitsa: Its application and techniques viz. Dhi, Dhairya, Atma Jnana, Kula Jnana, Kala Jnana, Desha Jnana, Bala Jnana, Samadhi, Santwana, Ashwasana, Ayurveda Psycho shock therapy viz. Trasana, Bhayadarshana, Adbhuta Darshana, Vismarana, Vismapana and Pratidvandwi Bhava with their scientific basis.
39. Role of Rasayana, Medhya Rasayana, Achara Rasayana and Vajikarana in Manasa Roga
40. Pathyapathya in Manasa Roga.
41. Manas Rogopayogi Vividha Aushadheenam Vivechanam: Ekamulika (Single drug), Panchavidha Kashaya Kalpana, Rasa Rasayana etc.
42. Brihatrayee, Yogaratnakara, Sharngadhara, Gadanigraha, Bhavaprakasha, Sahasrayoga ukta vividha yoganam vivechanam:Brahmi, Mandukaparni, Vacha, Jatamansi, Yashtimadhu, Shankhapushpi, Kushmanda, Ashwagandha, Kushtha, Tagara, Guduchi, Jyotishmati, Srikhandadichurna,Saraswatachurna etc. Swarna, Swarnamakshika Bhasma, Rajata, Pravala, Mukta, Manahshila, Krishna Chaturmukha Rasa, Krishnachaturbhuj Rasa, Brihatvatachintamani Rasa,Vata kulantaka Rasa, Manasmitra vataka, Smritisagar Rasa, Unmada gajakesari Rasa, Apatantrakari vati,Kumarakalyana Rasa etc. Kalyanaka ghrita, Brahmi ghrita, Mahapanchagavya ghrita, Mahapaishachika ghrita, Mahabhutarava ghrita, Kushmanda ghrita, Purana ghrita, Panchagavya ghrita etc.
43. Saraswatarishta, Ashwagandharishta, Chittachandirasava etc.
44. Himasagara taila, Tungadrumadi taila, Gandharaja taila, Brahmi taila, Sidharthaka agada etc.
45. Dhupa, Nasya, Lepa, Anjana yogas useful in Manas Roga.
46. Folk Medicine in Manasa Roga.
47. Mano Bheshaja vigyanam - Essentials of Psycho pharmacology, Knowledge of Biological and Pharmacological Therapies in the Management of Various Psychiatric diseases such as hypnotics, sedatives, anxiolytics, mood stabiliser/elevators, antidepressants, antipsychotics, anticonvulsants, Electro-convulsive therapy(ECT) and its applied aspects.

Panchakarma

1. Importance of Panchakarma and other allied procedures in the management of Manasa Roga.
2. Theoretical knowledge and application of the following karmas in Manasa Roga – Snehana, Svedana, Vamana, Virechana, Basti, Nasya, Raktamokshana, Mastishkya-Shiro-Basti, Shiro-Dhara, Shiro-Pichu, Shiro-Abhyanga, Murdhni taila, Anjana, Dhupa, Dhupana etc.

Yoga

1. Manovigyana sandharbhe yogasya vaishishtyam, Yogashastrasya upayogita mahatvam cha.
2. Yogasya darshanika svarupagyanasahitam tasya astanganam samichinam Gyanam.
3. Ayurveda drishtya yoga adhyayanasya upayogita, Ayurveda shastre pratipaditah yogasya siddhantah.
4. Satvavajaye gyana-bhakti-karma yoganam manasa roge vivechanam-Hatha yogascha.
5. Role of Shatkarma - Kapalabhati, Trataka etc. in Manasa Roga.
6. Naishthiki chikitsa in Manasa Roga.
7. Therapeutic potential of Yoga, Psycho biological effects of Yoga, Spiritual therapy and Yoga.
8. Sudarshana kriya , Transcendental meditation, Yoga nidra, Vipashyana and other allied yogic techniques in Manasa Roga chikitsa.
9. Manas and prana (bio-energy), pranic healing, means of bio-energy modulation in Manasa Roga.

Other allied therapeutic procedures:

1. Various methods of psychotherapy and counselling techniques, transactional analysis, behavioural therapy, psycho analysis.
2. Swapna Samvahana chikitsa -Hypnotherapy-Past life Regression and Age Regression Therapy in Manasa Roga.
3. Knowledge of psychiatric emergency and their management.
4. Knowledge of surgical intervention in Manasa Roga
5. Recent advances and updates in concepts, drugs and therapeutic procedures in Manasa Roga.

Content of the Practicals

S.No.	Topic	No. of Cases
1.	Hypnotherapy techniques	10
2.	Case Study- Unmada	20
	Apasmara	20
	Atatvabhinivesh	10
	Chittodvega	25
	Vishada	25
	Madatyaya	10
	Psycho Sexual disorders	25
	Psychogenic headache	20
	Nidra vikara	20
	Stress related disorders	25
3.	Examination of Manasika Bhava in psychosomatic illness	25
4.	Yogasana, Pranayama and Meditation Techniques	25
5.	Panchakarma Procedures in Manasa Roga	25
6.	Anjana, Dhoopanadi Karma	25

7.	Instruments (GSR biofeedback, EST, EEG, etc.)	25
8.	Counselling on the pattern of Sattvavajaya	25
9.	Psychometric scales (Ayurveda and conventional)	30

Visit to Mental Hospitals

Pattern of Practical Examination - 100 Marks

1.	Practical Record Book	- 10 Marks
2.	Bed side examination	
a.	Short Case	- 10 Marks
b.	Long Case	- 25 Marks
3.	Assessment of Scales and inventories (Ayurveda and Conventional)	- 10 Marks
4.	Thesis Presentation(PPT)	- 25 Marks
5.	Viva-voce	- 20 Marks

Reference Books-

1.	Related matter of Charak, Sushrut and Vagbhata and other ancient texts with commentaries	
2.	Prachin Manovikara Vigyanm	- Ayodhya Prasad Achal
3.	Ayurvediya Padarth Vigyan	- Ranjit Rai Deshai
4.	Ayurved Darshan	- Acharya Rajkumar Jain
5.	Purusha Vichaya	- Prof. V.J. Thakkar
6.	Ayurvediya Manas Vigyan	- Prof. Ram Harsh Singh
7.	Yoga evum Ayurved	- Acharya Rajkumar Jain
8.	Basic principles of Ayurvediya Padartha Vigyan	- Dr Yogesh Chandra Mishra
9.	Synopsis of Psychiatry	- Harold kaplon and Benjamin saddock
10.	Oxford textbook of Psychiatry	- Michael Gerlder, Paul Harrison
11.	General psychology and Abnormal psychology	- S.K. Mangal
12.	A text book of Post Graduate Psychiatry	- Neeraj Ahuja
13.	Mind in Ayurveda and other Indian Traditions	- A.R.V.Murthy
14.	Psychopathology in Indian medicine	- Satyapal Gupta
15.	Body- Mind-Spirit Integrative Medicine	- Prof. Ram Harsh Singh
16.	Rationale of Ayurveda Psychiatry	- Dr. A.R.V. Murthy
17.	Foundations of contemporary Yoga and Yoga Therapy-	Prof. Ram Harsh Singh
18.	Stress and its Management	- Dr. K.N. Udupa
19.	Concept of Mind	- Edited by Prof. C.R. Agnivesh, Kottakkal
20.	Kayachikitsa	- Part 3 by R. R. Pathak and Vidhyadhar Shukla
21.	Panchakarma Illustrated	- Prof. Shrinivasa Acharya
22.	Unified Dimensions of Ayurvedic Medicine	- Dr. J.S. Tripathi
23.	Essential Psychiatry	- Bhatia MS
24.	Sahassrayoga	- Nishteswar and Vaidyanath
25.	Ayurveda and the Mind	- David Frawley
26.	Manasa Roga Vijnana	- Balakrishna
27.	Comprehensive Textbook of Psychiatry	- Kaplan and Sadock's
28.	Psychiatry for medical students	- Robert J Waldinger
29.	Introductions to Psychology	- Morgan / King.

13. RASAYANA&VAJIKARANA

PAPER – 1 CONCEPT & PRACTICE OF RASAYANA

Marks: 100

1. Basic fundamentals and concepts of Rasayana

- Derivation, definition and synonyms of Rasayana
 - Classification of Rasayana
 - Understanding rasayana in perspective of:
 - Nutriceutical action
 - Immunomodulation
 - Oxygen free radicals & Antioxidant activity
 - Adaptogenesis
 - Cell proliferative activity
 - Cell regenerative activity
 - Genoprotective activity
 - Micronutrients
 - Anabolic activity
 - Interpretation of different types of Rasayana
 - Prakruti-Guna/character wise Rasayana
 - Sara wise rasayana
 - Dhatu specific rasayana
 - Indriyanusararasayana like netryya, hridya, tvacchya etc.
 - Srotas wise rasayana
 - Occupation wise rasayana
 - Season wise rasayana
 - Molecular biology concerned to rasayana
 - Human genome project
 - Genetics and Gene therapy
 - Stem cell theories
 - Introduction to Bioinformatics
 - Concept of Bala, types of bala, vriddhikshayahetu.
 - Knowledge of measures to improve bala
 - Concept of ojas. Types of ojas. Ojo-vriddhi-kshaya-karabhava.
 - Ojodustiprakara, hetu, samprapti and their management
 - Immunology
 - Immune system & components
 - Knowledge of immune mechanisms
 - Immune disorders
 - Rasayana as immunomodulator
 - Rasayana – immune specific/immunoglobulin specific
 - Rasayana in Immune compromised disease like, HIV/AIDS, tuberculosis, Cancer, liver cirrhosis etc.
2. Concept of jara (geriatrics) and ageing (gerontology)
 3. Concept of svabhavabalapravrittavyadhi with special reference to Jara its classification (kalaja&akalaja), etiopathogenesis and management
 4. Organ wise, system wise Common geriatric disorders and their management
 5. Yogya, ayogya, vidhi and prayojana of:
 - Kutipraveshikarasayana
 - Dronipraveshikarasayana
 - Karapratichiyarasayana

- Indraproktarasayana
 - Vaatatapikarasayana
6. Concept & practice of Achararasayana
 7. Knowledge & application of svasthavritta measures
 8. Swasthyanuvartakarasayana
 9. Rasayana as nutrient supplement
 10. Panchakarma and its role in rasayana
 11. Application of Kamyarasayanato achieve - Smriti, Medha, Bala, Prabha, Varna, Svara
 12. Knowledge of Vayasthaapana/Ayushyarasayana
 13. Naimittikarasayana – Vyadhicaraandvyadhiapunarbhavarasayana

PAPER – 2 CONCEPTS OF APATYA&SUSANTAANA

Marks: 100

1. Etymology, derivation, definition, synonyms of vandhya, vandhyaa, apatya, santaankara, susantaana
2. Importance of fertility
3. Essentials of fertility
4. Knowledge of Garbhasambhavasamagri
5. Knowledge of Garbhaadanaparicharya
6. Knowledge of Garbhotpatti
7. Knowledge of Shukravridhhi, kshayahetu, lakshana and chikitsa
8. Knowledge of Shukrapradoshajavyadhi and its management
9. Knowledge of Shukradustihetu, prakara, lakshana, diagnosis and management
10. Knowledge of Retodustiprakara, hetu, lakshana and chikitsa
11. Knowledge of Sukravahasrotodustikarana, lakshana, diagnosis and management
12. Knowledge of Disorders of spermatogenesis (etio-pathogenesis, diagnosis and management)
 - a. Oligozoospermia, asthenozoospermia, teratozoospermia, azoospermia, aspermia, pyospermia, necrozoospermia, OAT syndrome, sertoli cell only syndrome, klinefelters syndrome, kallaman's syndrome. Dal-castele's syndrome etc.
13. Obstructive azoosprmia-diagnosis, medical management and knowledge of surgical procedures
14. Retrograde ejaculation and other ejaculatory disturbances in respect to fertility – knowledge, diagnosis and management.
15. Reproductive endocrinal disorders and management
16. Immunological infertility – knowledge of various components involved in immunological infertility, mechanism, diagnosis and management
17. Sperm function tests, semen and cervical mucus interaction, post coital test
18. Knowledge of karyotyping and interpretation
19. Knowledge of chromosomal, genetic disorders pertaining to fertility and management
20. Knowledge and practice of Genetic counseling
21. Knowledge of Normal and abnormal sexual differentiation
22. Applied aspects of panchakarmain rasayana and vajikarana
23. Applied aspects of uttarbasti
24. Knowledge of Susantaana (epigenetics): preconceptional measures
25. Knowledge and technique of Pumsavanakarma for healthy progeny
26. Introduction to MART (Medically Assisted Reproductive Technologies): IUI, IVF-ET, ICSI, cloning etc.
27. Testicular biopsy – indications, surgical procedure, interpretation of HPE results
28. Knowledge of cystoscopy – diagnostic, interventional
29. Scrotal scan & Doppler
30. Knowledge of Varicocele: diagnosis, medical and surgical management
31. Knowledge of disorders of accessory sex glands and their management

PAPER – 3 CONCEPTS AND PRACTICE OF VAJIKARANA**Marks: 100**

1. Etymology, derivation, definition, scope and understanding of word vajikarana and its application in present scenario
2. Physiology of sexual act including mechanism of erection, ejaculation and orgasm
3. Knowledge of hypothalamo-pituitary-testicular axis
4. Knowledge of Psycho-neuro-endocrino-vasculogenic mechanism of sexual activity
5. Knowledge of Haemodynamics and different stages of erection
6. Psychological aspects of sexual function
7. Sukrottejakabhava. Factors influencing sexual function
8. Knowledge of Sukrasrutikarabhava
9. Knowledge of erogenous zones and lunar relationship
10. Maithunavidhi –asthangamaithuan, rules and regulations to have intercourse as per ritu, kala, gotra, kula etc.
11. Concept of Brahmacharya & its application in the present context
12. Sexual ethics
13. Myths & misconcepts regarding sex & sexuality
14. Sex education & counseling including pre- marital counseling
15. Knowledge of contraception and contraceptives
16. Knowledge of sukragatavata/sukrasthavatasukravritavata,
17. Klaibya – definition, nidana, prakara, spamprapti, and chikitsa
18. Male Sexual dysfunctions (etio-pathogenesis, diagnosis & management)
 - a. Disorders of sexual desire (increased libido, decreased libido, no desire etc.)
 - b. Erectile dysfunction (psychological, endocrinological, neurological & vasculogenic)
 - c. Ejaculatory disturbances (early, delayed, anejaculation, retrograde ejaculation)
 - d. Orgasmic disorders (anorgasmia)
19. Female sexual disorders, causes, diagnosis and management
20. Knowledge of various sexual postures and advantages
21. Napumsaka, shanda, trinaputrika, vaarta, hermaphroditism – definition, classification, samprapti, clinical manifestation, diagnosis and management
22. Knowledge of paraphilia, abnormal sexual behavior, perversions and management
23. Knowledge of diagnostic aids pertaining to sexual disorders
 - a. ICIVAD (Intra Cavernal Injection of Vaso Active Drugs)
 - b. Vacuum erection devices
 - c. Penile vibrators
 - d. Rigi scan NPT (Nocturnal Penile Tumescence)/snap gauge test
 - e. Penile biothesiometer
 - f. Penile Doppler
24. Knowledge of Dhat syndrome, night emissions
25. Mutrasukra, shukrashmari, sukrameha
26. Aharsha & apraharshabhava
27. Knowledge of Sexual performance assessment scales: MSP, GRISS, GRIMS, HARDS, Libido score, IIEF-5 scoring system for ED, Androgen deficiency score
28. Knowledge of Priapism and its management
29. Knowledge of theories of andropause and management

PAPER – IV PHARMACO-THERAPEUTICS OF RASAYANA & VAJIKARANA**Marks: 100**

1. Definition, derivation, etymology, synonyms of vajikara, vrishya
2. Pharmacology and pharmacodynamics of rasayana and vajikarana drugs
3. Definition, scope and understanding of
 - a. Rasayana
 - i. Vyadhibalavirodhi

- ii. Vyadyutpadakapratibandhak
 - iii. Vayasthapan
 - b. Sukrajanaka/sukrala
 - c. Sukrapravarthaka/rechaka
 - d. Shukrashodhana
 - e. Shukrastambhaka
 - f. Sukrashoshaka, vyavayi/vikashi
 - g. Kamoddeepana/kamottejaka etc.
4. Pharmacology of drugs belonging to:
 - a. Sukrajanaka/sukrala
 - b. Sukrapravarthaka/rechaka
 - c. Shukrashodhana
 - d. Shukrastabhaka
 - e. Sukrashoshaka, vyavayi/vikashi
 - f. Kamoddeepana/kamottejaka etc.
5. Pathya and apathya in relation to shukradhatu
6. Formulation, indications & uses of: Vrishyabasti, Vajikaranaabasti, Yapanabasti
7. Pharmacology of:
 - a. Akarakarabha,
 - b. Amalaki,
 - c. Aswagandha,
 - d. Bhallataka,
 - e. Bhang,
 - f. Bhrihati,
 - g. Gokshura,
 - h. Guduchi,
 - i. Haritaki,
 - j. Ikshu,
 - k. Jatiphala,
 - l. Jivanti,
 - m. Kapikacchu,
 - n. Kokilaksha,
 - o. Ksheeravidari,
 - p. Mandukaparni,
 - q. Masha,
 - r. Punarnava,
 - s. Shatavari,
 - t. Svetamusalī,
 - u. Yastimadhu etc.
 - v. Indraproktharasayanaa
8. Pharmacology of following Rasaushadhis:
 - a. Abhraka,
 - b. KukkutandaTvakBhasma,
 - c. Naga,
 - d. Rajata,
 - e. Shilajit,
 - f. Svarna,
 - g. Svarnamakshika,
 - h. Vanga,
 - i. Yashada etc.
9. Ingredients, properties, indications and phalasaruti of:
 - Agasthyarasayanaa,
 - Ajamamsarasayanaa
 - Akarakarabhadrivati,
 - Amrita PrashaGritha,
 - AswagandhaGritha,

- AvalgujaRasayanaa
- BalaswagandhaTaila,
- Bhallathakarasayana,
- Brahmarasayana,
- Brihatcchagalladyagritha
- Chandraprabhavati,
- Chyavanaprasha,
- GokshuradiGuggulu,
- HaritakyadiRasayana,
- JatiphaladiVati,
- Kaminividravana Rasa,
- KhadiraRasayana,
- KushmandaRasayanaa
- Lasunarasayana,
- MahamashaTaila,
- Makaradhwaja,
- NagabalaRasayana,
- NarasimhaRasayanaa,
- PippaliVardhamanaRasayanaa,
- Pippalirasayana,
- PurnachadrodayaMakaradhwaja,
- ShatavariGrita,
- Shilajathurasayana,
- Siddha Makaradhwaja,
- SrigopalaTaila,
- VanariGutika
- Vasantakusumakara,
- VeeryastambhaVati,
- VidangaRasayana,
- VidaryadiGritha,
- VrishyaGritha

10. Pharmacology & Pharmacodynamics of various vajikara, vrishya and rasayanabasties
11. Neuro-psycho pharmacology of rasayana, vajikarn drugs
12. Endocrinological aspects of rasayana,vajikarana drugs
13. Recent advances in rasayana and vajikarana drugs, formulations and therapeutic techniques

PRACTICALS

1. Assessment of Prakriti
2. Assessment of saara
3. Assessment of manasaprakriti
4. History taking & clinical examination of geriatric patients
5. Examination of male genito-urinary system
6. Semen analysis- Retopariksha
7. Post coital test, semen & cervical mucus interaction test
8. Technique of ICIVAD
9. Uttarbasti
10. Technique of psychosexual counseling
11. Applicatory knowledge of assessment scales pertaining to vajikaranaa/sexual functions
12. Technique of genetic counseling
13. Practical aspects of Panchakarma pertaining to rasayana&vajikarana
14. Technique of measuring penile BP

14. SHALYA TANTRA - SAMANYA

PAPER - I Shalya Siddhanta – Fundamentals of Surgery

100 Marks

1. Sushruta's contributions in surgical concepts and practices.
2. Knowledge of Dosha, Dhatu and Mala Vigyan and their importance in surgical diseases.
3. Significance and importance of Rakta as the Chaturth Dosha.
4. Yantras and Shastras – Surgical Instruments - Ancient and recent advances.
5. Trividha Karma – Purva, Pradhana and Pashchat Karma and its Importance.
6. Asepsis and Antisepsis.
7. Nirjantukarana – Sterilization – Various methods for surgical equipments, laparoscopes, linen and Operation theatre.
8. Surgical infections – Sepsis, Tetanus and Gas gangrene.
9. Care of patients suffering from Hepatitis, HIV-AIDS, STD and other associated infectious diseases.
10. Ashtavidha Shastra Karma – Critical knowledge and their application in surgical practice.
11. Suturing materials, appropriate use of sutures, drains, prosthetic, grafts and surgical implants.
12. Concept of Marma and their clinical application.
13. Shock - Its varieties and management.
14. Raktasrava / Haemorrhage – Types, Clinical features and Management.
15. Concept of Raktastambhana –Haemostasis.
16. Vranasopha – Inflammation and Vidradhi - Abscess
17. Granthi – Cyst and Arbuda – Benign and malignant Neoplasm – Concept of Oncogenesis and genetics of cancer.
18. Gulma and Udara Roga.
19. Kshudra Roga.
20. Fluid, electrolyte, Acid Base Balance and Nutrition
 - i. Introduction of physiology of fluids and electrolytes.
 - ii. Dehydration and over hydration.
 - iii. Specific electrolyte loss, Acidosis, Alkalosis, Symptomatology and Management.
 - iv. Electrolyte changes in specific surgical conditions and their management.
 - v. Plasma volume expanders and their use in surgical condition.
 - vi. Various replacement fluids in surgery, mode of administration and complications.
 - vii. Nutrition – Indications, types, mode of administration and complications.
21. Blood Transfusion – Blood groups, compatibility, Indications, Contraindications and complications with management.
22. Knowledge of antibiotics, analgesics, anti-inflammatory and emergency drugs in surgical practice.

PAPER – II Vishishta Shalya Vigyana - Shalya Tantra Speciality

100 Marks

1. Yogya Vidhi - Practical and Experimental training
 - i. Practice of surgical procedures on different models.
 - ii. Training of Laproscopic and Endoscopic procedures.
2. Vrana – Wound management
 - i. Management of Nija Vrana, Agantuja Vrana, Dushta Vrana and Nadi Vrana.
 - ii. Vrana Chikitsa – Shasti upakramas, Pathya-apathya .
 - iii. Types and Management of Dagdha Vrana - Burns and scalds.
 - iv. Infection of hands and foot, Diabetic wound, Prameha Pidaka – Diabetic carbuncle and its management.
 - v. Management of Pressure ulcers, Venous ulcers and other chronic non-healing ulcers.
 - vi. Gangrene and its management.

3. Mutra Roga – Urological diseases.
 - i. Anatomical and physiological knowledge of kidney, ureter, urinary bladder, prostate, seminal vesicles, urethra and penis.
 - ii. Investigations of Mutravaha Srotas – Urinary tract.
 - iii. Aetiopathogenesis and surgical procedures of Ashmari – Urinary stone diseases.
 - iv. Kidney and ureter – Clinical presentation, Investigations and Management of Congenital anomalies, Trauma, Infection, Neoplasm, Hydronephrosis, Hydroureter and Haematuria.
 - v. Urinary bladder - Clinical presentation, Investigations and Management of Congenital anomalies, Trauma, Infection, Neoplasm, Diverticulum, Vesico-vaginal fistula, Atony, Schistosomiasis, Urinary diversions, Retention of urine – Mutraghata and Mutrakruccha.
 - vi. Urethra - Clinical presentation, Investigations and Management of Congenital anomalies – Hypospadias, Epispadias, Posterior urethral valve, Trauma, Infection, and Neoplasm.
 - vii. Prostate and seminal vesicles – Benign and malignant enlargement of prostate, Prostatitis, Prostatic abscess and Calculi.
 - viii. Penis – Clinical presentation, Investigations and Management of Congenital anomalies, Trauma, Infection, Phimosis, Paraphimosis, Peyronie's disease and Neoplasm.
 - ix. Testis and scrotum - Clinical presentation, Investigations and Management of Congenital anomalies, Ectopic testis, Trauma, Infection, Neoplasm, Testicular torsion, Hydrocele, Varicocele, Spermatocele, Chylocele, Pyocele, Haematocele, Epididymal cyst and Fournier's gangrene.
 - x. Renal failure – Causes, Diagnosis, Investigations and Management.
4. Asthi roga and Marma Chikitsa - Orthopaedics
 - i. Anatomy and physiology of bone.
 - ii. Diseases of Asthi / Bone and Sandhi / Joints – Congenital, Degenerative, Infective, Metabolic and Neoplastic Disorders of Bones and Joints.
 - iii. Aetiopathogenesis, treatment along with surgical procedures of Bhagna - Fracture, Sandimoksha - Dislocation and bone grafting.
 - iv. Diseases of Spine, vertebral column and spinal cord.

PAPER – III Adhunik Shalya Karma - Modern surgery

100 Marks

1. Fundamentals of modern surgery and treatment of surgical disorders including surgical anatomy, physiology and pathology.
2. Diagnosis and Surgical treatment of head and spine injury, thoracic trauma and abdominal trauma. Blast injuries and Management
3. Diagnosis and Surgical management of neck disorders e.g. salivary glands, thyroid, Thyroglossal cyst and Fistula, Branchial cyst and fistula, Cystic hygroma and Lymphadenopathies.
4. Diagnosis and Surgical management of breast diseases, Benign and Malignant breast tumours.
5. Diagnosis and Surgical measures of diseases of Gastrointestinal system -
 - i. Oral cavity - Oral ulcers, Oral cancer, Precancerous conditions, Submucosal fibrosis, Leukoplakia, Cleft lip and palate, Lip tumours, Mucosal cyst, Nasopharyngeal cancer, Tongue ulcer and cancer.
 - ii. Oesophagus - Oesophageal varices, Dysphagia, Neoplasm, Strictures and Gastro oesophageal reflux.
 - iii. Stomach and duodenum –Congenital anomalies, Injuries, Inflammation, Ulcer, Neoplasm, Pyloric stenosis, Acute dilatation, Hiatus hernia and Foreign bodies.
 - iv. Pancreas - Congenital anomalies, Acute and Chronic pancreatitis, Calculi Neoplasm and Cysts of pancreas.

- v. Peritoneum, Omentum, Mesentery, Retroperitoneal Space – Peritonitis, Abscess, Neoplasm, Mesenteric cyst, Torsion of mesentery, Vascular thrombosis, Retroperitoneal cyst and Fibrosis.
 - vi. Abdominal mass - Diagnosis and Management.
 - vii. Small intestine - Congenital anomalies, Inflammation, Ulcer, Neoplasm, Stenosis, Injuries, Foreign bodies, Diverticuli, Peutz-jeghers syndrome, Chron's disease, Carcinoid tumours, Enteric perforation and Intestinal fistula.
 - viii. Large intestine - Congenital anomalies, Inflammation, Ulcer, Neoplasm, Stenosis, Injuries, Foreign bodies, Diverticuli, Faecal fistula, Amoebiasis and Familial polyposis coli.
 - ix. Caecum and Vermiform appendix- Appendicitis, Appendicular abscess, Appendicular mass, Perforation, Carcinoid Tumor and other Neoplasm.
 - x. Gastrointestinal bleeding – Haemetemesis, Malaena, Haemobilia, Bleeding per anum - Causes, Diagnosis and Management.
 - xi. Rectum and anal canal - Diagnosis and Surgical management of Congenital Anomalies, Inflammation, Ulcer, Neoplasm, Stenosis, Prolapse, Haemorrhoids, Fistula-in-ano, Fissure-in-ano, Anorectal Abscess, Incontinence, Injuries, Foreign bodies, Sacrococcygeal Teratomas and Pilonidal sinus .
6. Umbilicus and abdominal wall – Congenital anomalies, Umbilical infections, Sinus, Neoplasm, Abdominal dehiscence, Divarication of recti, Desmoid tumor and Meleney's gangrene.
 7. Diagnosis and surgical measures of diseases of Hepatobiliary system -
 - i. Liver – Abscess, Cyst - Hydatid cyst, Primary and Secondary malignant tumours, Portal Hypertension and Budd-Chiari Syndrome.
 - ii. Gall bladder and Bile duct - Congenital anomalies, Acute and Chronic Cholecystitis, Cholelithiasis, Neoplasm, Cholangitis, Stenosis, Choledocholithiasis, Choledochal cyst and Cholangiocarcinoma.
 - iii. Spleen – Splenomegaly and Splenic Injury.
 8. Diagnosis and surgical measures for disorders of Artery, Vein, Ligaments, Muscles and Tendons.
 9. Diagnosis and surgical management of Hernias – Inguinal, Femoral, Umbilical, Incisional, Abdominal wall and other hernias.
 10. Endoscopic procedures - Oesophagogastroduodenoscopy, Sigmoidoscopy and Colonoscopy.
 11. Diagnostic and therapeutic laparoscopy.
 12. Anaesthesia - Definition, Types, Anesthetic agents, Indications, Contraindications, Procedures, Complications and management.

PAPER –IV Shalya Vangmaya – Shalya literature, Research and Development

1. Thorough study of the Sushruta Samhita including other relevant portions of Brihatrayee and Laghutrayee.
2. Knowledge and importance of Surgical Audit.
3. Medico legal issues – Understanding the implications of acts of omission and commission in practice. Issues regarding Consumer Protection Act, medical profession, national health policy - Implications in a medico-legal case like accidents, assaults etc.
4. Surgical ethics including Informed consent.
5. Knowledge of different type of experimental Surgical Model for Research in Surgery.
6. Sandhana Karma – Plastic reconstructive and cosmetic surgery. Fundamentals of Sandhana Karma –
 - i. Karna Sandhana – Auroplasty
 - ii. Nasa Sandhana – Rhinoplasty
 - iii. Ostasandhana – Cheiloplasty
 - iv. Grafts and Flaps – Techniques and applications.
 - v. Vascular anastomosis and grafts.

7. **Anushalya Karma** – Parasurgical procedures

- i. Kshara Karma, Kshara Sutra, Agnikarma and Raktamoskhana.

Pattern of Practical examination

1. Case record (25)	100 Marks
2. Short case	-10 Marks
3. Long case	-10 Marks
4. Identification of specimen / radiograph and Instruments	-20 Marks
5. Thesis Presentation	- 20 Marks
6. Viva-voce	-20 Marks

Reference Books

1. Sushruta Samhita
2. Ashtanga Sangraha
3. Ashtanga Hridaya
4. Charaka Samhita
5. The Surgical instruments of the Hindus - Girindranath Mukhopadhyaya
6. Shalya Tantra Samuchchaya - Pandit Ramadesh Sharma
7. Shalya Vigyan (Part 1-2) - Dr. Surendra Kumar Sharma
8. Shalya Samanvaya (Part 1-2) - Vd. Anantaram Sharma
9. Shalya Pradeepika - Dr. Mukund Swaroop Verma
10. Sushruti - Dr. Ram Nath Dwivedi
11. Clinical Shalya Vigyan - Dr. Akhilanand Sharma
12. Bhagna Chikitsa Deshpande - Dr. Prabhakar Janardhan
13. Kshara sutra management in anorectal ailments and Dr. Kulwant Singh. - Dr. S.K. Sharma, Dr. K.R.Sharma
14. Anorectal diseases in Ayurveda Kumar Chowdary. - Dr. Sizoria and Dr. Praveen
15. Adhunik Shalya Chikitsa Siddanta - Dr. Katil Narshingham Udupa
16. Agnikarma Technology Innovation - Dr. P.D. Gupta
17. Shalya Tantra Ke Siddhant - Dr. K.K.Takral
18. Recent advances in the management of Arshas / Haemorrhoids - Dr. P. Hemantha Kumar
19. Arsha Evum Bhagander Mein sutra Avacharan - Vd. Kanak Prasad Vyas
20. Recent advances in Kshara Sutra - Dr. M. Bhaskar Rao
21. Leech application in Ayurveda - Dr. M. Bhaskar Rao
22. Kshara Sutra - Dr. S.N.Pathak
23. Shalya Shalaky Tantra - Vd. S.G. Joshi
24. Surgical ethics of Ayurveda - Dr. D.N. Pande
25. Text book of Surgery - Sabistan
26. Operative Surgery - Rob and smith
27. Bailey and Love's Short Practice of Surgery Mann and R.C.G. Russell - Norman.S. Williams, Charles.V.
28. Fractures and Joint Injuries - Watson-Jones
29. Text books of Operative Surgery - Farquharsons'
30. Principles of Surgery - Schwartz
31. Emergency Surgery -Hamilton Bailey's
32. Surgical pathology - Willing Worth
33. Clinical methods in surgery - S. Das
34. Textbook of Operative Surgery - S. Das
35. Shalya Vigyan (Sachitra) - Anantram Sharma
36. Anushastra Karma - Dr. D.N. Pande
37. Concept of Vrana is Ayurveda - Dr. Lakshman Singh
38. Significance for Poorva Karma in Surgical Patient - Dr. Lakshman Singh

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| 39. Sangyahan Prakash | - Dr. D.N. Pande |
| 40. A concise Text Book of Surgery | - S. Das |
| 41. A manual on Clinical Surgery | - S. Das |
| 42. A System of Surgical Diagnosis | - T.N. Patel |
| 43. A Practical Guide to Operative Surgery | - S. Das |
| 44. Drugs and Equipment for Anaesthesia | - Arun kumar |
| 45. Manual of Surgical Instruments | - M.M. Kapur |
| 46. Ward Procedures | - Patel Mansukh. B |
| 47. Recent trends in the management of Arshas / Haemorrhoids | - Dr. P. Hemantha Kumar |
| 48. Primary Anaesthesia | - Maurice King |
| 49. Synopsis of Anaesthesia | - Lee |
| 50. Clinical Anatomy/ Surgical Anatomy | - John E. Skandalakis |
| 51. Surgical Instruments of the Hindus | - Girindharnath Mukopadyay |
| 52. Outline of Orthopedics | - John Crawford Adams and David Hamblen. L |
| 53. Outline of Fracture | - John Crawford Adams |
| 54. Recent trends in the management of Bhagandara / Fistula-in-ano | - Dr. P. Hemantha Kumar |
| 55. Principles and Practice of Agnikarma | - Dr. Anand Kumar and Dr. Kanchan Shekokar. |
| 56. Manipal Manual of Surgery | - Dr. Rajgopal Shenoy |

15. SHALYA – KSHARA EVUM ANUSHAstra KARMA

PAPER - I Shalya Siddhanta – Fundamentals of Surgery

100 Marks

- 1 Sushruta's contributions in surgical concepts and practices.
- 2 Knowledge of Dosha, Dhatu and Mala Vigyan and their importance in surgical diseases.
- 3 Significance and importance of Rakta as the Chaturth Dosha.
- 4 Yantras and Shastras – Surgical Instruments - Ancient and recent advances.
- 5 Trividha Karma – Purva, Pradhana and Pashchat Karma and its Importance.
- 6 Asepsis and Antisepsis.
- 7 Nirjantukarana – Sterilization – Various methods for surgical equipments, laparoscopes, linen and Operation theatre.
- 8 Surgical infections – Sepsis, Tetanus and Gas gangrene.
- 9 Care of patients suffering from Hepatitis, HIV-AIDS, STD and other associated infectious diseases.
- 10 Ashtavidha Shastra Karma – Critical knowledge and their application in surgical practice.
- 11 Suturing materials, appropriate use of sutures, drains, prosthetic, grafts and surgical implants.
- 12 Concept of Marma and their clinical application.
- 13 Shock - Its varieties and management.
- 14 Raktasrava / Haemorrhage – Types, Clinical features and Management.
- 15 Concept of Raktastambhana –Haemostasis.
- 16 Vranasopha – Inflammation and Vidradhi - Abscess
- 17 Granthi – Cyst and Arbuda – Benign and malignant Neoplasm – Concept of Oncogenesis and genetics of cancer.
- 18 Gulma and Udara Roga.
- 19 Kshudra Roga.
- 20 Fluid, electrolyte, Acid Base Balance and Nutrition
 - a. Introduction of physiology of fluids and electrolytes.
 - b. Dehydration and over hydration.
 - c. Specific electrolyte loss, Acidosis, Alkalosis, Symptomatology and Management.
 - d. Electrolyte changes in specific surgical conditions and their management.
 - e. Plasma volume expanders and their use in surgical condition.
 - f. Various replacement fluids in surgery, mode of administration and complications.
 - g. Nutrition – Indications, types, mode of administration and complications.
- 21 Blood Transfusion – Blood groups, compatibility, Indications, Contraindications and complications with management.
- 22 Knowledge of antibiotics, analgesics, anti-inflammatory and emergency drugs in surgical practice.

PAPER – II Vishista Anushastra Karma

100 Marks

1. Kshara Karma and Prayoga – Therapeutic Chemical Cauterization.

- i. Introduction of different types of Kshara, Method of preparation, Standardization, pH value, Application, Complications and its management.
- ii. Surgical Anatomy and Physiology of Anus and Rectum.
- iii. Arshas - Nidana, Purvaroop, Roopa, Samprapti, Prakara and Chikitsa.
- iv. Haemorrhoids - Aetio-pathogenesis, types and its surgical management.
- v. Knowledge of different methods of treating Haemorrhoids - Rubber band ligation, D.G.H.A.L, Radiofrequency, Ablation, Cryo-surgery, Cautery, Laser, Infrared coagulation and other advanced techniques.
- vi. Bhagandara - Nidana, Samprapti, Prakara, Doshanusarachikitsa, Knowledge and application of Kshara Sutra.

- vii. Fistula-in-ano - Definition, Aetio-Pathogenesis, Types, Diagnostic methods and its Surgical, Para Surgical Management including knowledge of Fibrin Glue, Advanced Flap Therapies and other recent techniques.
- viii. Parikartika - Nidana, Samprapti and its Chikitsa.
- ix. Fissure-in-ano - Aetio-pathogenesis, types and its surgical management.
- x. Sannirudhaguda and its Chikitsa.
- xi. Anal Stenosis - Aetio-pathogenesis and its surgical management.
- xii. Gudavidradhi - Nidana, Purvaroopo, Roopa, Samprapti, Prakara and its Chikitsa.
- xiii. Anorectal abscesses – Aetio- pathogenesis, types, complications and its surgical management.
- xiv. Gudagatashalya – Diagnosis and its Management.
- xv. Foreign body in rectum and anal canal - Method of diagnosis and its management.
- xvi. Congenital Anorectal disorders and its surgical management.
- xvii.** Gudaarbuda and Granthi and its Chikitsa.
- xviii.** Anorectaltumour - Types and its surgical management.

2. Agnikarma – Therapeutic cauterization

- i. Introduction, definition and importance of Agnikarma.
- ii. Agnikarma - Poorva, Pradhana and Paschat karma, various substances and Shalakas used for Agnikarma and their indications, contra-indications and complications.
- iii. Diagnosis and management of Oil burn, Dhumopaghata, Ushnavata, Sunburn, Frost bite and Electric burn.
- iv. Knowledge of modern thermal equipment - Diathermy, Laser therapy, microwave, Ultracission technique, Cryo Technique and its uses.
- v. Effect of Agnikarma on skin, muscle tissue, nerves, metabolism, blood circulation and infective lesions.

3. Raktamokshana – Bloodletting Procedures

- i. Introduction and importance of Raktamokshana.
- ii. Indication and contraindication of Raktamokshana.
- iii. Justification of usage of different types of Raktamokshana in various therapeutic applications.
- iv. Different types of Raktamokshana – Sastrakriitha - Siravyadhana, Prachana and Asastrakriitha - Shringa, Jaluka, Alabu and Ghati.
- v. Jalauka - Nirukti, Paryaya, Bhedha, Sangrahana, Samrakshana, Jalaukavacharana Vidhi - Poorva, Pradhana and Paschat karma.
- vi. Knowledge of Leeches - Morphology, Anatomy, Physiology, Bio-chemical effects of its various constituents present in its saliva.
- vii. Rakta- Importance, Formation, Panchabhoutikatva, RaktaSthana, Guna, Prakurta Karma and Rakta Sara Purashalakshanas. Suddha and Dushta Rakta Lakshanas. Rakta Pradoshaja Vyadhis.

PAPER – III Adhunika Shastra Karma - Modern Surgery

100 Marks

1. Fundamentals of modern surgery and treatment of surgical disorders including surgical anatomy, physiology and pathology.
2. Diagnosis and surgical measures for disorders of vein, artery, ligaments, joints and muscles.
3. Diagnosis and Surgical management of neck disorders e.g. salivary glands, thyroid tumours, etc.
4. Diagnosis and Surgical management of breast diseases.
5. Diagnosis and surgical management of traumatic disorders - Head injury, thoracic and abdominal trauma.
6. Diagnosis and surgical management of diseases of Gastrointestinal system- stomach, pancreas, peritoneum, omentum, mesentery, retroperitoneal space, small intestine, large intestine and vermiform appendix.

7. Diagnosis and surgical management of Proctological disorders.
8. Diagnosis and surgical measures of diseases of Hepatobiliary system - Liver, gall bladder, bile ducts and spleen.
9. Diagnosis and surgical management of diseases of Urogenital system.
10. Diagnosis and surgical management of diseases of scrotum and testis. – Hydrocele, Ectopic testis and Undescended testis.
11. Diagnosis and surgical management of Hernias – Inguinal, femoral, umbilical, incisional, abdominal wall and other hernias.
12. Endoscopic procedures – Oesophagogastroduodenoscopy, Sigmoidoscopy and Colonoscopy.
13. Diagnostic and therapeutic laparoscopy.
14. Anaesthesia - Definition, Types, Anaesthetic agents, Indications, Contraindications, Procedures, Complications and Management.

PAPER – IV ShalyaVangmaya

100 Marks

1. Thorough study of the Sushruta Samhita including other relevant portions of Brihatrayee and Laghutrayee.
2. Knowledge and importance of Surgical Audit.
3. Value of research and teaching in surgery.
4. Medico legal issues - Understanding the implications of acts of omission and commission in practice. Issues regarding Consumer Protection Act, medical profession, national health policy - Implications in a medico-legal case like accidents, assaults etc.
5. Surgical ethics including Informed consent.
6. Knowledge of different type of experimental Surgical Model for Research in Surgery.

Pattern of Practical examination

100 Marks

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| 7. Case record (25) | -10 Marks |
| 8. Short case | -10 Marks |
| 9. Long case | -20 Marks |
| 10. Identification of specimen / radiograph and Instruments | -20 Marks |
| 11. Thesis Presentation | -20 Marks |
| 12. Viva-voce | -20 Marks |

Reference Books

- | | |
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| 57. Sushruta Samhita | |
| 58. Ashtanga Sangraha | |
| 59. Ashtanga Hridaya | |
| 60. Charaka Samhita | |
| 61. The Surgical instruments of the Hindus | - Girindranath Mukhopadhyaya |
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| 63. Shalya Vigyan (Part 1-2) | - Dr. Surendra Kumar Sharma |
| 64. Shalya Samanvaya (Part 1-2) | - Vd. Anantaram Sharma |
| 65. Shalya Pradeepika | - Dr. Mukund Swaroop Verma |
| 66. Sushruti | - Dr. Ram Nath Dwivedi |
| 67. Clinical Shalya Vigyan | - Dr. Akhilanand Sharma |
| 68. Bhagna Chikitsa
Deshpande | - Dr. Prabhakar Janardhan |
| 69. Kshara sutra management in anorectal ailments
and Dr. Kulwant Singh. | - Dr. S.K. Sharma, Dr. K.R.Sharma |
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Kumar Chowdary. | - Dr. Sizoria and Dr. Praveen |
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| 74. Recent advances in the management of Arshas / Haemorrhoids | - Dr. P. Hemantha Kumar |
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| 94. Significance for Poorva Karma in Surgical Patient | - Dr. Lakshman Singh |
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| 99. A Practical Guide to Operative Surgery | - S. Das |
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| 101. Manual of Surgical Instruments | - M.M. Kapur |
| 102. Ward Procedures | - Patel Mansukh. B |
| 103. Recent trends in the management of Arshas / Haemorrhoids | - Dr. P. Hemantha Kumar |
| 104. Primary Anaesthesia | - Maurice King |
| 105. Synopsis of Anaesthesia | - Lee |
| 106. Clinical Anatomy/ Surgical Anatomy | - John E.Skandalakis |
| 107. Surgical Instruments of the Hindus | - Girindharnath Mukopadyay |
| 108. Outline of Orthopedics | - John Crawford Adams and David Hamblen. L |
| 109. Outline of Fracture | - John Crawford Adams |
| 110. Recent trends in the management of Bhagandara / Fistula-in-ano | - Dr. P. Hemantha Kumar |
| 111. Principles and Practice of Agnikarma | - Dr. Anand Kumar and Dr. Kanchan Shekakar. |
| 112. Manipal Manual of Surgery | - Dr. Rajgopal Shenoy |

16. AYURVED DHANVANTRI - ASTHI SANDHI AND MARMAGAT ROGA

Paper – 1 ASTHI SANDHI MARMA ABHIGHAT SIDDHANTA

100 marks

1. Asthi Sharira - Etymology, Embryology, Applied Anatomy and Physiology of Asthi. Its Panchbhautik constitution, Poshan (Nutrition), Asthivaha Srotas, Upadhatu and Mala. Total Number and classification of Asthi. Concept of Dhatwagni in Ayurveda. Asthi Dhatu Kshaya and Vriddhi lakshana. Knowledge about Tarunasthi. Embryology, Ossification, Histology, Metabolism, Blood Supply, Types and Biomechanics of Bone and cartilage.
2. Healing mechanism of bone and factors influencing the bone healing according to Ayurvedic and Modern concept. Biological and Biophysical technologies for the Enhancement of Fracture Repair. Knowledge of Sandhaniya and Ropaniya drugs.
3. Sandhi Sharira – Classification, Applied Anatomy and Physiology of Asthi Sandhi. Classification, Applied Anatomy and Physiology of Joints and Healing Mechanism of a joint.
4. Marma Sharira – Basic concept of Marma, etymological derivation, definition, classification, Pramana, importance & applied aspect of individual Marma. Interpretation of each Marma in present context (*Regional s urgical a natomy*). Detailed discription of Tri-Marma and Rogamarga. Prognosis of Marmaghata.
5. Sira, Dhamni, Lasika, and Snayu Sharira - Applied Anatomy and Physiology of Vessels, Lymphatic, Ligaments, Tendons, Muscles, Peripheral Nerves and Plexuses.
6. Knowledge of Splints, Orthotics & Prosthetics.
7. Disability calculation, Bio-mechanics of gait.
8. Vrana Vigyan – Etiology, classification, symptomatology, prognosis, complications and management principles of Nija and Sadyo Vrana. Knowledge of Shashti Upakrama, Seevana - Suturing and Vrana Bandhana -Bandaging. Wounds and Ulcers – Etiology, classification, symptomatology, complications. prognosis and management principles. Advanced wound closure techniques, suture materials, dressing / bandaging materials and techniques. Wound Healing Mechanism.
9. Vranitopasniya - Management of Vranita - Wounded person. Management Principles of wounded persons. Assessment and immediate management of poly-trauma patient , crush syndrome and Acute Respiratory Distress Syndrome.
10. Vranashotha and Vidradhi - Inflammation and Abscess – Etiology, Pathogenesis, classification, stages and management.
11. Knowledge of Orthopedic implants (*e.g. wires, screws, plates, nails*) and Instruments. Knowledge of equipments (*e.g. C -arm image i ntensifier a nd d rill machines etc*).
12. Orthopedic Radiology - Knowledge of Radiological imaging techniques (X-ray, CT Scan, MRI, USG, Radioisotop scanning) in Orthopedics.
13. Medico-legal aspects in Orthopedics - Handling of Medico- legal cases and issuing of MLCs, Understanding the implications of relevant acts e.g. Consumer Protection Act, Motor Vehicle Act, Right to information Act and other relevant acts in force time to time.
14. Concept of Pain according to Ayurved and Modern Medical science.
15. Principles of Reconstruction, Transplantation, Bone grafting, Bone Banking, Bone transportation and Amputation.
16. Knowledge about National Health Policies and relevant guidelines by State Govt. or Govt. of India.

Paper – II ASTHI SANDHI MARMA GATA VYADHI VISESHA

100 marks

1. Diseases of Asthi & Asthi Dhatu - Asthigata Vata, Asthivaha srothodushti, Asthi Dhatu Kshaya & Vriddhi, Adhyasthi, Asthi Vidradhi.
 - a. Congenital, Degenerative, Infective, Metabolic, Neoplastic and Miscellaneous Disorders of Bones.

2. Diseases of Sandhi – Sandhigat Vata, Vatarakta, Amavata and Kroshtukashirshaka.
 - a. Different diseases of joints – Etiology, classification, and treatment principles.
3. Vata Vikara – Asthi, Sandhi and Marma related Vata Vikara like Gridhrasi, Bisvachi, Avabahuka, Manyastambha, Khalvi, Dhatugata vata, Snayugata vata, Katishoola, Katigraha.
4. Diseases pertaining to Muscles, Tendons, Ligaments, Fascia and Bursae.
5. Diseases and Congenital anomalies of Spine e.g. Ankylosing spondylitis, Infective conditions, Tuberculosis, Spondylolisthesis, Inter-vertebral Disc Prolapse, Spondylosis, Scoliosis, Kyphosis, spina bifida, Hemivertebra, Block vertebra, Sacralisation and Lumbrisation etc.
6. Diseases and Congenital anomalies of Cervical Spine
7. Diseases and Congenital anomalies Sacroiliac Joint and Bony Pelvis.
8. Diseases and Congenital anomalies of Hand
9. Diseases and Congenital anomalies of Foot
10. Diseases and Congenital anomalies of Limbs
11. Orthopedic Neurological Disorders. Post Polio Paralysis & Cerebral Palsy.
12. Snehana, Swedana and Panchakarma in Marma, Asthi and Sandhi Vyadhi.
13. Yogic Practices in Orthopedics.
14. Principles of Arthroplasty- Joint Replacement.
15. Introduction of Peripheral Vascular Diseases.
16. Pediatric Orthopedics
17. Orthopedic Oncology
18. Introduction of Radiotherapy, Chemotherapy, Hormone Therapy, Immunotherapy and gene therapy.

Paper – III Abhigata Vigyan – Traumatology

100 marks

1. Bhagna - Etiology, classification and General Management principles and Prognosis.
2. Modern concept of Bone and Joint injuries - Etiology, Epidemiology, Classification and General management principles.
3. Individual Bone and Joint injuries - Etiology, Epidemiology, Classification and management principles.
4. External immobilization techniques - Classical and traditional Kusa -splints, Plaster of Paris Technique, Knowledge of different splints and Plasters
5. Pathological Fractures including Fragility fractures, Stress Fractures and Peri-prosthetic Fractures.
6. Fractures in Children – Etiology, Epidemiology, Diagnosis, management and complications.
7. Prognosis of skeletal injuries, Complications of Fractures and Joint Injuries e.g. Myositis ossificans, Volkman's ischemic contracture, Compartment syndrome, Crush Syndrome, DVT, Thromboembolism, Fat Embolism.
8. Rehabilitation of trauma patient and Principles of Sukhchestaprachara - Physiotherapy and its use in skeletal injuries
9. Treatment Principles of Asahanta Bhagna - Non-unions, Vishmolvana Sahanta - Malunions and Ignored or un-reduced dislocations.
10. Diagnosis and management principles of injuries of Vessels, Nerves, Tendons and Ligaments.
11. Head, Chest and Abdominal Injuries and management principles.
12. Pelvis and Spine injuries and their management principles.
13. Sports Medicine – Sports medicine and sports related Shoulder injuries, Elbow injuries, Knee injuries, Ankle Injuries, Recurrent Dislocations and other sports related injuries.
14. Knowledge of Marma Chikitsa like Kalari Marma - Martial Art, Adankal - Marmaghata Chikitsa in Siddha Marma in trauma and sports medicine.

Paper – IV Shalya Kriyatmaka - Operative Orthopedics**100 marks**

1. Agropharniya Vigyan – Knowledge about Pre-operative preparation and Post operative care, Operation Theatre and its requirements regarding Instruments / Equipments and Personnel.
2. Fumigation of Operation Theatre and sterilization of Instruments, Equipments, Linen and Implants by various techniques.
3. Anu Shalya Karma (Para surgical procedures) in orthopedics – Role of Kshara Karma, Agni Karma, Raktavsechana in orthopedic disorders.
4. Knowledge of various Implants regarding their material, types, mechanics and practical use.
5. Knowledge of Conventional and advanced procedures being done for Different Bone and Joint Injuries e.g. Open Reduction and Internal Fixation, Closed Reduction and Internal Fixation, External fixators and other operative techniques.
6. Knowledge of Plastic Surgery in orthopedics and Bone grafting techniques.
7. Knowledge of various surgical procedures being done for Different Bone and Joint Diseases.
8. Hand Surgery for Diseases, Deformities and Injuries.
9. Foot Surgery for Diseases, Deformities and Injuries.
10. Amputations and Arthrodesis – General Principles of Amputations /Arthrodesis and regional Amputations.
11. Knowledge of Diagnostic and Therapeutic Arthroscopy.

Reference Books

Sushruta Samhita	Relevant Parts
Sushrut Samhita Ghanekar Commentary	
Sushruta Samhita (Dalhana Commentary)	Relevant Parts
Charak samhita	Relevant Parts
Ashtang Hridaya	Relevant Parts
Ashtang Sangraha	Relevant Parts
Bhava Prakash	Relevant Parts
Yog Ratnakar	Relevant Parts
Bhaishajya Ratnavali	Relevant Parts
Sharangdhar Samhita	Relevant Parts
The Surgical instruments of the Hindus Bhagna Chikitsa (Dr. P.J. Deshpandey)	– Girindranath Mukhopadhyaya.
Agni Karma – Technological Innovations	- Prof. P.D. Gupta
Shalya Tantra Samuchchaya	- Pandit Ramadesh Sharma
Shalya Vijyan (Part 1-2)	- Dr. Surendra Kumar Sharma
Shalya Samanvaya (Part 1-2)	- Vd. Anantaram Sharma
Shalya Pradipika	- Dr. Mukund Swarup Verma
Adhunika Shalya Chikitsa Siddanta	- Dr. Katil Narshingham Udupa
Shalya tantra Ke Sidhant	- Dr. K.K. Takral
Surgical Ethics in Ayurved	- Dr. G.D. Singhal
Susruta's Contribution to Surgery	- Dr. S. Sankaran
Anushastra Karma	- Dr. D.N. Pande
Concept of Vrana is Ayurved	- Dr. Lakshman Singh
Marma Chikitsa	- Dr. C. Suresh Kumar
Joint Affections and their Ayurvedic Prospective	- Vaidya Vilas M. Nanal
Marma Vimarsha	- Vaidya Vilas M. Nanal
Significance for Purva Karma in Surgical Patient	- Dr. Lakshman Singh
Medical Varmalogy	- Dr. N. Shunmugom et.al.
Siddha Varmalogy	- T. Vasanthakumar
Watson and Jones	- Fracture and Joint Injuries (J.N. Wilson)
Practical Fracture Treatment (R. McRae)	

Clinical Orthopedic Examination (R. McRae)
 Apleys System of Orthopedics (Apley Louis Solomon)
 Orthopedics – Principles & Their Application Vol. I-II (Samuel L. Turek)
 Textbook of Orthopedics and Trauma Vol. I-IV (G.S. Kulkarni)
 Fractures in Adults Vol. I – II (Rockwood and Green's)
 Fractures in Children Vol. I (Rockwood and Wilkins)
 Campbell's Operative Orthopedics Vol. I – IV
 A Concise Text Book of Surgery (S. Das)
 Pye's Surgical Handicraft
 Clinical Methods in Surgery (Sriram Bhatt)
 Clinical Methods in Surgery (S. Das)
 Operative Surgery (S. Das)
 Schwartz Principles of Surgery
 Surgical Exposures in Orthopedics - J.B. Lippincott Comp. Publication

Pattern of Practical Examination

100 marks

- Discipline and regularity 10 Marks
- Bed side examination
 - Short case 10 Marks
 - Long case 20 Marks
- Identification of specimen / instruments/Radiographs 10 Marks
- Dissertation Presentation 25 Marks
- Viva –Voce 25 Marks

PRACTICAL TRAINING

- Training of History taking, bed side clinical examination and case presentations.
- Identification and demonstration of surgical instruments.
- Training of orthopedic related Diagnostic imaging techniques.
- Training of Local anesthetic techniques in orthopedics.
- P.G. Scholar shall develop the skills by observing, assisting and performing independently the following procedures:
 - Non-operative
 - Manipulative reductions and external immobilization techniques.
 - Application of POP cast, Splints and Braces.
 - Bandaging Techniques
 - External medicaments and Procedures like Snehana, Swedana, Vasti, Kati Vasti, Janu Vasti, Greeva Vasti etc.
 - Training in various massage techniques.
 - Corrective POP casts for club foot & other congenital deformities
 - Operative
 - External fixation of compound fractures
 - Debridement of crush injuries
 - Amputations
 - Internal fixation of common simple fractures
 - Polio surgery such as TA lengthening.
 - Sequestrectomy in chronic osteomyelitis
 - Biopsy from a mass
 - Internal fixation of Fractures.
- Training in Vrana (Wound) Management techniques.
- Practical training of Physiotherapy in orthopedic and trauma patients.
- Training of Anu Shalya Karma like Agni Karma, Kshara Karma and Rakta Mokshna in orthopedic disorders.
- Orthopedic related Panchakarma Procedures.

17. SANGYAHARAN

Paper 1 Sangyahan siddhant avum vangmaya: Literary, Research And Development

- History of Sangyahan and its development in Ayurveda.
- Importance of anesthesia in Ayurveda.
- Contribution of AAIM and other pioneers in the development of Sangyahan.
- Applied aspects of Ayurveda with respect to sangyahan Vrihatrayee and Laghutrayee.
- Instruments for anesthesia in ancient era and their development.
- Rakta, its importance, Raktadhana and Raktstambhana.
- Knowledge of disorders like Unmada, Apasmara, Mada, Murrcha, Sanyasa and Stabdhatu etc.
- Madataya, Stages of Madataya and its management.
- Pharmacology of Medhya, Vednasthapak, Madkari, Sangyasthapak, Nidrajanan, Akshepjanan and shamana, Svedjanan, Hridyae, Hridyotejak, Raktbharshamak, Shoolprashaman, Vaman and hrillashar (Antiemetic) dravya as mentioned in Ayurvedic samhita & their application in Sangyahan.
- Aroma therapy as complementary and alternative therapy in pain management and Palliative care.

Paper 2 Sangyahan Bshhaja Vigyan (Pharmacology related to Anesthesia)

Pharmacology of:

- Drugs acting on Autonomic nervous system:
 - a. Cholinergic system and drugs- Agonist and antagonist
 - b. Adrenergic system and drugs- Agonist and antagonist
- Autocoids and related drugs:
 - a. Histamine and Antihistaminic
 - b. 5HT and antagonist
 - c. NSAID'S
 - d. Prostaglandins and leukotrienes
- Drugs acting on Respiratory system
- Drugs acting on Somatic nervous system
 - a. Skeletal muscle relaxants – Depolarizer and Non-Depolarizer.
 - b. Local anesthetics
- 5. Drugs acting on central nervous system
 - a. General Anesthetics- Fixed and Volatile anesthetic agents.
 - b. Sedative and hypnotics
 - c. Anti epileptics
 - d. Anti psychotic and anti-maniacs
 - e. Opioids Analgesics and antagonists
- 6. Drugs acting on cardiovascular system
 - a. Cardiac glycosides
 - b. Anti arrhythmic drugs
 - c. Anti anginal and other anti ischemic drugs
 - d. Anti hypertensive drugs
- 7. Drugs acting on Kidneys
 - a. Diuretics
 - b. Anti diuretics
- 8. Coagulants and anti coagulants

Paper 3 Vishishta Sangyahan – Applied Anesthesia

- Airway management- Intubation, failed intubation drill, LMA, Bag and mask ventilation.

- Anesthesia For: General surgery, Obstetric and Gynecology ,E.N.T. and Ophthalmic, Orthopedic ,Dental ,Pediatric , Urology , plastic and Outpatient / Day care surgery.
- Anesthesia for patients with: Diabetes mellitus, Thyroid diseases, inherited metabolic diseases, Obesity, Respiratory diseases, Cardiac diseases, Renal diseases, Geriatric problems and neuromuscular diseases.
- Regional anesthesia:
- Sub-arachnoid and epidural anesthesia, analgesia.
- Plexus and nerve blocks for upper and lower limb
- Regional anesthesia for thorax and abdomen
- Surface anesthesia, infiltration and field blocks
- Complications of Regional and general anesthesia, morbidity, mortality and medico-legal aspects.
- Anesthesia for Endoscopic, laparoscopic Surgery and Laser Surgery
- Anesthesia for Trauma and mass casualty
- Emergency anesthesia.

Paper 4 Monitoring Advances and Research in Sangyahan

- Monitoring in anesthesia:
 - Cardiovascular, Respiratory, Renal function, Neurologic and neuromuscular monitoring.
 - Peri- operative Thermo- regulation and monitoring
 - Peri- operative awareness and monitoring depth of anesthesia with BIS.
 - Peri- operative acid-base balance
 - Pt's positioning in anesthesia, its hazards and management
 - Peri- operative Fluid management and Blood transfusion.
 - Risks and hazards of anesthesia
- Anesthesia equipments –
 - Medical gas systems
 - Breathing systems
 - Ventilators
 - Anesthesia machine
- Post operative management-
 - Post anesthesia care
 - Post operative nausea and vomiting
 - Post operative Intra-Venous fluid therapy
 - Acute post operative pain
- Misalleneous-
 - HDU,ICU, CCPR- BLS & ACLS.
 - Parental nutrition.
 - Environmental factor and electrical safety
- Management of Acute / Chronic Pain:
 - Assessment of pain
 - Peri-operative pain,
 - Chronic pain syndrome-detection and prevention,
 - WHO regime for Cancer pain,
 - TENS, Behavioral therapy
- Anesthesia in remote locations
- Clinical care in extreme environments (At high and low pressure and space).
- Relevance of Sammohana (Hypnosis), Acupressure and Acupuncture in Sangyahan.
- Recent advances in research in Sangyahrana, Pain Management and Palliative Care. Scope and Application of principles of Ayurveda in Sangyahrana Research.

METHODS OF TRAINING AND TEACHING FOR M.D. (Ayu) ANAESTHESIOLOGY -

Case Presentation	Once a Week
Seminar / Symposia	Once a Week
Pre Anesthesia Care / Clinic	Thrice a Week
Critical Care unit / Recovery Room	Once a Week
Classroom Lectures	Twice a Week
Morbidity / Mortality	Once a Week
Audit	Once a month
Journal Club	Once a month
Record Keeping	Once a month
Emergency Drills / Protocols	Once a Week
Interesting Cases	Once a Month

Practical Examination

- | | |
|--|-----------|
| 1. Case Record(25) | -50 Marks |
| 2. Presentation of different types of Anesthesia | -50 Marks |
| 3. Thesis Presentation | -50 Marks |
| 4. Viva-Voce | -50 Marks |
| Minimum pass marks | 50% |

Result: - Pass/Fail

Staff required

Teaching- Professor-1
Reader/Asso. Prof-1
Lecturer/Assi Prof-2
Sen.Resident-2

Non Teaching staff
Anesthesia Technician- 1
Anesthesia Attendent-2
Ward boy-2
Sweeper-2

Reference Books

- | | |
|---|------------------------|
| a. Sushruta Samhita | - |
| b. Charka samhita | - |
| c. Ashtang Hridaya | - |
| d. Practice of Anesthesia | - Churchill Davidson |
| e. Miller's Anesthesia | - Ronald D Miller |
| f. Synopsis of Anesthesia | - Alfred Lee |
| g. Sangyahan Prakash | - Dr. D. N. Pande |
| h. Agni karma-Technological Innovation | - Dr. P.D. Gupta |
| i. Practice of Anesthesia and Resuscitation | - Dr. P.K. Gupta et al |
| j. Essentials of Anesthesiology | - Prof. A.K. Paul |
| k. Clinical Anesthesia | - Prof. A.K. Paul |
| l. Anu Shastra karma | - Dr. D.N. Pande |
| m. Textbook of Anesthesia | - Aitkenhead |

- | | | |
|--|---|-------------------|
| n. Anesthesia and co-existing disease | - | Stoelting's |
| o. Physiology and Pharmacology | - | Stoelting's |
| p. Understanding Anesthesia Equipments | - | Dorsch & Dorsch's |
| q. Clinical anesthesiology | - | G. Edward Morgan |

18. AYURVEDA DHANWANTRI -SHALAKYA - NETRA ROGA

**Theory Four papers of- 100 marks each
Practical and Viva-voce - 100 marks**

PAPER- I Netra Rog Vangmaya

1. Available literature of Netra roga vigyana in Brihatrayi, Laghutrayi, Yogaratnakar, Chakradutta, Bhel Samhita, Harita samhita and Kashyap samhita.
2. Critical analysis of the available literature of netra roga vigyana in the above given classics e.g. Puyalasa and Vatahata Vartma In Sushruta samhita and Vagabhat samhita.
3. Unique/ specific contribution of different classics, Acharyas and commentators in the development of Netra roga vigyana.
4. Analytical determination of subjects related to eye disorders in ancient and modern literatures.
5. Update chronological development of Netra roga vigyana right from Vedic period.
6. Update chronological development of Ophthalmology.

PAPER- II Ayurvediya Netra Rog Vigyan

1. Enumeration and classification of Netra Rogas.
2. Descriptive knowledge of *etiology, pathogenesis, prodromal symptoms, clinical features, complications and prognosis* of pakshma -vartma- sandhi- - shukla- Krishna- dristi & sarvagata rogas along with exogenous eye diseases available in Ayurvedic classics. Medical and surgical Management of the above diseases with special skill development in Ashtavidha shastra & Trividha Anushastra chikitsa related to Netra roga.
3. Netra kriya kalpa procedures like seka, ashchyotana, vidalaka, pindi, tarpan, putapaka & anjana and their practical application and analysis based on ocular pharmacology. Standard operative procedures for Kriyakalpas including Aushada kalpanas.
4. Study of nayanabhighata and , its management and prevention.
5. Knowledge of preventive and community ophthalmology along with national programme for control of blindness and role of Ayurveda.
6. Ayurvedic Concept of Congenital, developmental and neoplastic diseases of netra.

PAPER – III Adhunik Netra Rog Vigyan

1. Knowledge and application of current diagnostic techniques and equipments and therapeutics in Ophthalmology.
2. Detailed study of refractive errors along with defects of accommodation and their management.
3. Detailed knowledge of classification, etiology, pathogenesis, signs and symptoms, differential diagnosis, prognosis and complications of diseases of eye orbit, lacrimal apparatus, lids, conjunctiva, cornea, sclera, uveal tract, lens, vitreous, retina, optic nerve and visual pathway with comprehensive knowledge of their medical and surgical management.
4. Ocular trauma , its emergencies and management.
5. Ocular motility disorders and their medical and surgical management
6. Neurological and systemic disorders affecting the eyes and their management.

PAPER – IV Recent Advances in Netra Chikitsa & Ophthalmology.

1. Update advances in the development of Ayurvedic drug formulations, therapeutic procedures and treatments of Netra roga.

2. Advanced technologies in the diagnosis of eye diseases.
3. Advanced technologies & techniques in the medical & surgical management of Netra roga.
4. Advanced management and technologies in Ophthalmology.
5. Detailed study of recent research works on chakshushya dravyas.
6. Comparative and critical study of modern advances in surgical techniques over the surgical methods described in Ayurvedic classics

Pattern of practical/Clinical training

1. Posting in OPD,IPD,OT & Kriya kalp Kaksha.
2. Case presentation ,clinical discussion, Seminars & Work shops.
3. Skill development in Ashtavidha shastra karma, Trividha Anushastra Karma and Modern Ophthalmic Surgical procedures viz lid surgery, pterygium surgery, cataract surgery, squint surgery, glaucoma surgery, DCR & DCT ect.

Methods of Training

- Intensive integrative training would be imparted to scholars in understanding the classical Ayurvedic aspects with an emphasis of critical comparative interpretation.
- Mandatory participation of scholars in seminars, group discussions, clinical demonstrations , journal review meetings, case study, continuing education activities and research clinical projects.
- During the first year course the emphasis would be laid to impart adequate knowledge on fundamental aspects and their applications, with a focus on latest diagnostic tools , instrumentations and laboratory procedures. Practical orientation and hospital based clinical training is an integral part of the curriculum all through.
- In the second year ,training would stress upon extending the knowledge on techniques and imparting skill for surgical performance, ophthalmic procedure based therapies, surgical/para surgical procedures **so that the scholar is able to perform ophthalmic surgical procedures like** Ashtavidha shastra karma, Trividha Anushastra Karma and Modern Ophthalmic Surgical procedures viz lid surgery, pterygium surgery, cataract surgery, squint surgery, glaucoma surgery, DCR & DCT ect **independently**.
- In the third year the scholar should concentrate on the clinical work and research work based on the dissertation.
- The participation of the scholars in all the aspects of educational process is mandatory.
- Hospital postings – The student has to work for 6 terms of resident posting is compulsory out of which first 2 postings will be as a junior resident and the next four postings will be as a senior resident.
- The student should also develop in the academic work of the department.

Pattern of Practical Examination

100 Marks

- | | |
|---|-----------|
| 1. Bed side examination | |
| Short Case 2 of 10 marks each | -20 Marks |
| Long Case | -20 Marks |
| 2. Identification of specimen / Instrument / Radiograph | -10 Marks |
| 3. Thesis Presentation / Viva | -10 Marks |
| 4. Teaching skill | -10 Marks |
| 5. Viva Voce | -30 Marks |

Reference Books

1. Charaka Samhita with commentaries
2. Sushruta Samhita and Vagbhata with commentaries
3. Astanga Hridaya and Astanga Sangraha with commentaries
4. Madhava Nidan with commentaries
5. Bhavaprakasha with commentaries
6. Sarangadhara Samhita with commentaries
7. Sahstrayoga Sangraha
8. Relevant part of Chakradhatta, Bhel Samhita, Harita Samhita
9. Shalaky Tantra - Ramanath Dwivedi
10. Shalaky Tantra - R.C. Chaudhary
11. The Actions and uses of Indigenous Ophthalmic Drugs - N.Srikanth
12. Clinical Examination of Ophthalmic Cases - Agarwal and Gupta
13. Alder's Physiology of the Eye and Clinical Applications - Cotlier, St. Louis
14. Disease of the Lens and Vitreous, Glaucoma and Hypotony - Duke Elder, St. Louis
15. A Text Book of Ophthalmology - Ahmed E.
16. A Text book of clinical ophthalmology - Dhanda
17. Modern Ophthalmology - Dutta, L.C. Jaypee Brothers
18. Manual of the Diseases of the Eye - May, C. and Worth, C.
19. Ophthalmology – Principles and Concepts - Bailliere Tindal and Castell
- Newell, F.W., C.V. Mosby Co., St. Louis.
20. Ocular Differential Diagnosis - Roy Fedrick Hamptn
Lea and Febiger
21. Clinical Ophthalmology - Smith, R.Vergheze Company
22. Abraham Manual of Refraction - Duke and Elder
23. Hand Book of ophthalmology - B.M. Chatterjee
24. Hand Book of ophthalmology - Khurana
25. Clinical ophthalmology - Kanski
26. Parsons Diseases of Eye
27. Stallard's Eye Surgery

19.AYURVEDA DHANWANTRI - SHALAKYA - SHIRO- NASA-

KARNA EVUM KANTHA ROGA

PAPER – I Shiro- Nasa- Karna - Kantha Roga Vigyan Maulik Siddhanta and Vangmaya

1. Detailed study of Shalakyatantra from Bruhat trayee, Laghutrayee, Kashyap samhita, Yoga ratnakar, Chakradutta, Bhel samhita , Harita samhita and other granthas.
2. Comparative and critical study of rogas explained by various granthas.
3. Syntactical derivation, definition and importance of the word "Shalakyaa". Sequential development and history of science of ear, nose, throat and Shiras disorders. Establishment of "Superiority of shiras' among the organs. Determination and importance of the verse '**Nasa Hi Shiraso Dvaram**'. Syntactical derivation and the synonyms of the words Karna, Nasa, Kantha, Shiras etc.
4. Descriptive knowledge of the anatomy and Physiology of ear, nose, throat and Shiras as per ancient and modern science.
5. Examination of the ear, nose, kantha and shira as per Ayurveda and modern science.
6. Common etiology of ear, nose, throat and shiras disorders, their pathogenesis, prodromal symptoms, classification, clinical features and general treatment.
7. Importance of shaman and sodhana therapy in ear, nose, throat and shira disorders with general introduction to local therapeutic procedures of ear nose and throat and shira e.g. kaval, gandusha etc.
8. Detailed applied knowledge of recent advanced diagnostic and therapeutic techniques and equipments (Yantra and Shastra) used for ENT and Shira disorders.
9. General knowledge of 'vrana bandhana' (bandaging of wounds) and applied bandage in ear etc.
10. Update chronological development of ENT from Vedic period.
11. Study of essential modern drugs, anaesthetic agents of diagnostic and surgical importance.

PAPER – II Ayurvediya Shiro – Nasa - Karna - Kantha Roga Vigyan

1. Examination of the ear, nose, throat and shira patients.
2. Karna-Nasa –Kantha –and Shira rogas samkhya samprapti, descriptive knowledge of etiology, pathogenesis, prodromal symptoms, classification, clinical features, Upasaya-Anupsaya(prognostic measures) sadhyasadhyatwa and complications of ear disorders described in the classics of Ayurved. Detail description along with practical orientation of their management.
3. Nasa rogas samkhya samprapti, descriptive knowledge, etiology, pathogenesis, prodromal symptoms, classification, clinical features, Upasaya-Anupsaya (prognostic measures), sadhyasadhyatwa and complications of nasal diseases described in the classics of Ayurved. Detail description along with practical orientation of their treatment.
4. Kantha rogas samkhyasamprapti, descriptive knowledge about etiology, pathogenesis, prodromal symptoms, classification, clinical features, Upasaya- Anupsaya (prognostic measures),sadhyasadhyatwa and complications of kantha diseases described in the classics of Ayurved. Detail description along with practical knowledge of treatment.
5. Shira and Kapala (cranial vault) disorders samkhya samprapti, descriptive knowledge, etiology, pathogenesis, prodromal symptoms, classification, clinical features, Upasaya-Anupsaya (prognostic measures) and complications of Shira and kapala diseases described in the classics of Ayurved. Detail description along with practical knowledge of treatment.

PAPER – III Adhunika Shiro- Nasa- Karna - Kantha Roga vigyan

1. Descriptive knowledge of instruments and recent equipments available for diagnosis of ear – nose – throat – head disorders along with their practical application.
2. Descriptive knowledge of etiology, pathogenesis, clinical features, differential diagnosis, classification along with complications of different ear – nose- throat and

head disorders. Detail knowledge of the treatment (including conservative and surgical) of the above mentioned disorders.

3. Imaging in ENT and Head disorders, detailed knowledge of LASERS, radiotherapy, chemotherapy and other recently advanced treatment modalities like speech therapy, cochlear implant, rehabilitation of the deaf and mute, etc. related to ear – nose – throat – and head disorders.
4. Management of emergencies in ENT and head disorders.

PAPER – IV Shiro- Nasa- Karna -Kantha Roga Vigyan Shalya Chikitsa

1. Knowledge of agropaaharniya and d trividha karma i.e pre operative, operative and post operative measures. Knowledge of eight types of surgical procedures (Astavidha Sashtra Karma) and post operative care of the patient with respect to ENT disorders (Vranitopasaniya).
2. Practical knowledge of updated surgical procedures in ear – like constructive surgery of external and middle ear, excision of pre auricular sinus, Tympanoplasty, Mastoidectomy, Stapedectomy, Endolymphatic sac surgery, Facial nerve decompression surgery, Cochlear implant, etc with their complications and their management.
3. Nose – Septo-rhinoplasty, SMR, Functional Endoscopic sinus surgery, Caldwell luc surgery, Antral puncture, Antral lavage, Turbinectomy, Polypectomy, Various surgical procedures done for malignancy of Nose and paranasal sinuses, Young's surgery, etc
4. Throat - Adenoidectomy, Tonsillectomy, Surgical procedures for pharyngeal abscesses, cauterization of pharyngeal wall granulations, tracheostomy, vocal cord surgery, surgery of vocal cord paralysis, management of laryngeal trauma, laryngectomy, etc.
5. General introduction of four treatment procedures like Bheshaj– Kshar – Agni– Shastra and Raktavsechana with their applied aspects in ear nose throat and shiro disorders . Chaturvidha upakrama in raktasandhan vidhi related to ear nose throat and head disorders. Haemostatic management in ENT.
6. Removal of foreign bodies in the ear nose throat and shira as per Ayurveda and modern science.
7. Karna-Sandhan Nasa-Sandhan, fundamental and applied aspects of Ayurveda.

Methods of Training

- Intensive integrative training would be imparted to scholars in understanding the classical Ayurvedic aspects with an emphasis of critical comparative interpretation.
- Mandatory participation of scholars in seminars, group discussions, clinical demonstrations , journal review meetings, case study, continuing education activities and research clinical projects.
- During the first year course the emphasis would be laid to impart adequate knowledge on fundamental aspects and their applications, with a focus on latest diagnostic tools , instrumentations and laboratory procedures. Practical orientation and hospital based clinical training is an integral part of the curriculum all through.
- In the second year ,training would stress upon extending the knowledge on techniques and imparting skill for surgical performance, ENT procedure based therapies, surgical/para surgical procedures **so that the scholar is able to perform ENT surgical procedures independently.**
- In the third year the scholar should concentrate on the clinical work and research work based on the dissertation.
- The participation of the scholars in all the aspects of educational process is mandatory.
- Hospital postings – The student has to work for 6 terms of resident posting is compulsory out of which first 2 postings will be as a junior resident and the next four postings will be as a senior resident.
- The student should also develop in the academic work of the department.

Pattern of Practical Examination:

- | | |
|---|-----------|
| 1. Case Record(25) | -10 Marks |
| 2. Bed side examination | |
| Long Case | -20 Marks |
| Short Case | -10 Marks |
| 3. Identification of specimen / Instrument / Radiograph | -10 Marks |
| 4. Thesis Presentation | -25 Marks |
| 5. Viva Voce | -25 Marks |

Reference Books

1. Sushrut Samhita
2. Charak Samhita
3. Ashtang Hridaya
4. Ashtang Samgraha
5. Laghutrayi
6. Modern books related to ENT disorder
7. Diseases of Nose Throat and Ear - Bhargav Shah
8. Diseases of Nose Throat and Ear, Head and Neck EB Edr.
9. A Text book of otorhinolaryngology - Scott Browns editions.
10. Text book of Ear Nose Throat diseases – Dhingra
11. Text book on ENT – Mohd. Maqbool
12. Logan Turner’s book on ENT
13. Ballengers text book of ENT
14. Kumin’s text book of ENT
15. Rob Smith’s book of ENT surgery
16. Paprella’s book of ENT
17. Hazarika’s text book on ENT
18. Books on examination of ENT
19. Audiology Anirwan Biswas
20. Kurt’s Audiology
21. Books on Speech therapy

20. AYURVEDA DHANWANTRI -SHALAKYA - DANTA EVUM MUKHA ROGA

PAPER – I Danta evum Mukha Roga – Ayurveda Siddhanta and Vangmaya Marks 100

1. Etymology, definition and importance of the word 'Shalakya', History and development of the science of oral and dental diseases. Etymology and synonyms of the word 'Mukha' and 'Danta'. Ancient and recent knowledge of anatomy of oral cavity and teeth along with the knowledge of salivary glands.
2. Detailed study of Oral cavity and gustatory physiology.
3. Oral hygiene, Social aspect of oral hygiene, preventive measures in oral cavity diseases, general etiology, pathogenesis, prodromal symptoms, clinical features and general management of oral cavity diseases.
4. Agropaharaniya, knowledge of purva, pradhan and pashchat karma. Study of Ashta Vidha Shastra Karmas in relation to Danta and Mukha Roga.
5. Applied and detailed study of therapeutic measures for oral and dental disorders, like Kavala, Gandusha, Dhumapana, Nasya, Murdhtaila Mukhalepa and Pratisarana and their definition, types, indications, contraindications, procedure, features of proper, excess, deficient application and their management.
6. Importance of shodhan and shaman treatment in oral and dental diseases and knowledge of common recipes useful in oral and dental diseases.
7. General introduction of four types of treatment (Bheshja, Shastra, Kshara, Agni). Detail description of Anushastra karma; their practical knowledge in oral and dental diseases.
8. Analytical determination of related subjects of danta-mukha disorders available in ancient and modern commentaries of different Samhita.

PAPER – II Ayurvediya Danta evum Mukha Rog Vijnana Marks 100

1. Examination of oral cavity, periodontia and teeth. Teeth eruption and its systemic disturbances in a child, Classification, Number of teeth along with detail knowledge of abnormal tooth eruption. Dental disorders in paediatric age group, their prevention and treatment.
2. Danta gata rogas - Dental diseases detailed in the classics of Ayurved; their etiology, pathogenesis, prodromal symptoms, clinical features, complication and applied approach in the treatment of dental diseases.
3. Detailed study of etiology, pathogenesis, prodromal-symptoms, clinical features, complications and prognosis of diseases of the Danta-Mula Gata Roga (**gum-periodontia**) as detailed in the classics of Ayurved. Practical approach/orientation in Treatment of the periodontal diseases.
4. Oshtha (lip), Jihva (tongue) and Talu (palate) Rogas, detailed study of etiology, pathogenesis, prodromal - symptoms, clinical features, complications and, prognosis. Detailed description of their treatment along with practical orientation.
5. Sarvasara Mukharogas (Generalized oral diseases) available in ayurvedic classics. Detailed study of etiology, pathogenesis, prodromal-symptoms, clinical features, complications, prognosis and management of mukha rogas along with practical orientation.
6. Knowledge of Dantabhighata (dental trauma) and Mukhabhighata (oral injury) along with diagnostic and referral skills.

PAPER – III Adhunik Danta evum Mukha Rog Vijnana Marks : 100

1. Detail study of etiology, pathogenesis, clinical features, classification and complication of various oral and dental diseases available in literature of Modern sciences. Detail study of their recent available medical therapeutics.
2. Detail description of diagnostic technology in the diagnosis of oral and dental disease.
3. Study of essential modern drugs, anaesthetic agents of diagnostic and surgical importance.

4. Descriptive Knowledge of up-to-date available modern instruments and their application for examination, diagnosis and management of oral, periodontal and dental diseases.
5. Up-to-date knowledge of applied and available surgical procedures indicated in various dental diseases like tooth extraction, RCT, Dental filling, filling materials, tooth fixation and tooth implants etc.
6. Systemic Effects of oral, periodontal and dental diseases.

PAPER – IV Danta evum Mukha Rog Vijnana & Dentistry

Marks - 100

1. Jaalandhara Bandha, its importance and application in Tooth extraction without anaesthesia.
2. Vishishta Upadanta parikalpana (Dental Material and Prosthesis).
3. Recent Research studies and advanced clinical applications of Kriya Kalpas in Danta and Mukha Rogas.
4. Detailed study of recent available medical therapeutics and Research studies in Dental and oral cavity disorders.
5. Advanced diagnostic technology in Dentistry and oral pathology.
6. Benign and malignant tumors of Oral Cavity, their management and role of Ayurveda in Such conditions.
7. Useful conducts for treatment of oral and dental diseases with study of related medico-legal aspects.

Methods of Training

- Intensive integrative training would be imparted to scholars in understanding the classical Ayurvedic aspects with an emphasis of critical comparative interpretation.
- Mandatory participation of scholars in seminars, group discussions, clinical demonstrations, journal review meetings, case study, continuing education activities and research clinical projects.
- During the first year course the emphasis would be laid to impart adequate knowledge on fundamental aspects and their applications, with a focus on latest diagnostic tools , instrumentations and laboratory procedures. Practical orientation and hospital based clinical training is an integral part of the curriculum all through.
- In the second year, training would stress upon extending the knowledge on techniques and imparting skill for surgical performance, Dental procedure based therapies, surgical / para surgical procedures **so that the scholar is able to perform Dental surgical procedures independently.**
- In the third year the scholar should concentrate on the clinical work and research work based on the dissertation.
- The participation of the scholars in all the aspects of educational process is mandatory.
- Hospital postings – The student has to work for 6 terms of resident posting is compulsory out of which first 2 postings will be as a junior resident and the next four postings will be as a senior resident.
- The student should also develop in the academic work of the department.

Pattern of Practical Examination:

- | | |
|---|-----------|
| 1. Bed side examination | |
| Short Case 2 of 10 marks each | -20 Marks |
| Long Case | -20 Marks |
| 2. Identification of specimen / Instrument / Radiograph | -10 Marks |
| 3. Thesis Presentation / Viva | -10 Marks |
| 4. Teaching skill | -10 Marks |
| 5. Viva Voce | -30 Marks |

Reference Books

1. Sushrut Samhita
 2. Useful Portion of Charak Samhita-Ashtang Samgraha
 3. Useful portion of Laghutrayi related to Danta and Mukha Roga
 4. Shalaky Vijnanam
 5. Nimi Tantra
 4. Dental Anatomy Histology
 5. Essentials of Preventive and Community Dentistry
 6. Complete Denture Prosthodontics
 7. Orthodontics the Art and Science
 8. Text book of Pediatric Dentistry
 9. Text book of Oral and Maxillofacial surgery
 10. Clinical Periodontology
 11. Anatomy for Dental Students
 12. Clinical Periodontology
 13. Operative Dentistry
 14. Oral and maxillofacial surgery secrets
 15. Killey and Kay's Outline of Oral Surgery
 16. Clinical Dentistry
 17. Synopsis of Oral Pathology
 18. Oral Pathology
- Dalhana
 - Ashtang Hridaya
 - Ravindra Chandra Chaudhary
 - Ramanath Dwivedi
 - Dr. S.I. Bhalajhi
 - Dr. Soben Peter
 - Dr. J.J. Manappallil
 - Dr. S.I. Bhalajhi
 - Dr. S.G. Damle
 - Dr. Vinod Kapoor
 - Dr. B.R.R. Varma
 - Inderveer Singh
 - Carranza , Newman
 - M A Marzouk
 - A.Omar Abubaker
 - Girdon R Seward
 - Ivor G. Chestnut , John Gibson
 - S N Bhaskar
 - Stone

21. PANCHKARMA

PAPER-I Purva Karma-Snehana and Svedana

1. Panchkarma in Ashtanga Ayurved and Significance of Shodhana
2. Ama and Shodhana, benefits of Shodhana, Samikshya Bhavas in Shodhana,
3. Importance of Pachana prior to Snehana, methods, drugs, duration and dose for Pachana, samyak Lakshana of Pachana

Snehana

1. Etymology and definition of Sneha and Snehana
2. General considerations about Snehana
3. Classifications of Sneha, Sneha-Yoni, detailed knowledge of four types main Sneha- Ghrita, Taila, Vasa and Majja with their characteristics, importance and utility, various aspects of Uttama Sneha
4. Properties of Snehana Dravya and their interpretation
5. Effects of Snehana
6. Sneha Kalpana, various types of Sneha Paka with their utility
7. Indications and contraindications of Snehana
8. Classification of Snehana: Bahya and Abhyantara Snehana
9. Bahya Snehana and Bahir-Parimarjana, utility and importance of Bahya Snehana
10. Classification of Bahya Snehana
Methods, indications, contraindications, specific utility of the followings Abhyanga, Mardana, unmardana, Padaghta, Samvahana, Udvartana/Utsadana, Udgharshana, Avagaha, Pariseka, Lepa, Pralepa, updeha, Gandusha, Kavala; Karana and Nasa Purna, Akshi Tarpana; Murdhni Taila: Shiro-abhyanga, Shirodhara, Siro Pichu and Siro Basti, Shiro Lepa (Talapotichil), Talam and Takradhara, etc.
11. Knowledge of digestion and metabolism of fat
12. Karmukata of Abhyantara and Bahya Snehana
13. Knowledge of different western massage techniques
14. Abhyantara Snehana: Brimhnartha, Shamanartha and Shodhanartha, definition, method and utility of Brimhanartha and shamanrtha Snehana; difference between Shamanartha and Shodhanartha Snehana
15. Methods of Abhyantar Snehana
16. Shodhanartha Snehana: Acchapana and Vicharana, Utility and various methods of Sadyasnehana, Avapidaka Sneha
17. Matra of Sneha : Hrasiyasi, Hrasva, Madhyama and Uttma Matra with their indications, specific utility of Ghrita, taila, Vasa and majja; Anupana of Sneha
18. Need and method of Rukshana before performing Snehana in specific conditions and Samyak Rukshana Lakshana
19. Shodhannga Snehana Vidhi and methods of fixation of dose
20. Diet and Pathya during Snehana
21. Observation of sneha Jiryamana, Jirna and Ajirna Lkashana
22. Samyak, Asnigdha and Ati Yoga Lakshana of Snehana
23. Snehs vyapta and their management
24. Pariharya vishaya and Parihara Kala

Svedana

1. Etymology and definition of Svedana
2. General considerations about Svedana
3. Properties of Svedan and Svedopaga Dravya
4. Indications and contraindications of Svedana
5. Various Classifications of Sveda and Svedna
6. Detailed knowledge of four types of Sveda of Sushruta with their utility;

7. Hina, Mridu, Madhya and Mhana Sveda; Ekanga and Sarvanga sveda with their utility
8. Utility and method of each of 13 types of Sagni and 10 types of Niragni Sveda
9. Shodhannga and Samshamaniya Sveda
10. Methods to protect the vital organs (varjya anga) during Svedan Procedure
11. Detailed Knowledge about Utility of below mentioned Svedan procedures:- Patrapinda Sveda, Shashtika Shalipinda Sveda, Churna Pinda Sveda, Jambira Pinda Sveda, Dhanya Pinda Sveda, Kukkutanda Sveda, Anna Iepa, Valuka Sveda, Ishtika Sveda, Nadi Sveda, Bashpa Sveda, Kshira bashpa Sveda, Avagaha Sveda, Parisheka Sveda, Pizichil, Dhanyamla Dhara, Kashaya Dhara, Kshira Dhara and Upanaha Sveda.
12. Avasthanusari Svedana in various disorders
13. Samyak, Ayoga and Atiyoga Lakshana, Sveda Vyapat and their management
14. Diet and regimens during and after Svedana
15. Karmukata of Svedana
16. Current sudation modalities like Sauna bath, Steam Bath, Infrared, etc.
17. Svedana with Kati Basti, Janu Basti and Griva Basti
18. Study of Snehana and Svedana related portions in classics with commentaries

PAPER – II Vamana and Virechana Karma

Vamana Karma

1. Etimology, definition and general considerations of vamana
2. Properties of Vamaka and Vamanopaga drugs
3. Knowledge and utility of important Vamaka drugs and their preparations (Vamana Yoga)
4. Avasthanusara Vamana and its utility.
5. Indications of Vamana
6. Contraindications of Vamana with reasons
7. Pachana prior to Snehana
8. Detailed knowledge and method of preparation of patient with Snehana
9. Abhyanga and Svedana as Purvakarma of Vamana
10. Diet and management of gap day
11. Need of increasing of Kapha for proper Vamana, Kapha increasing diet
12. Management of Patients on the morning of Vamana
13. Administration of food articles prior to Vamana
14. Drug, time, Anupana, Sahapana, dose and method of administration of Vamana and Vamanopaga preparations
15. Method of Vamana Karma, waiting period for automatic Vamana Vega and manipulation in its absence
16. Observations prior to beginning of Vamana such as sweat on forehead, horripilation, fullness of stomach and nausea
17. Observation and assistance of the patient during Vamana
18. Vega and Upavega of Vamaana and its counting, observations and preservation of vomitus matter and its weighing
19. Samyak, Ayoga and Atiyoga of Vamana
20. Laingiki, Vaigiki, Manaki and Antiki Shuddhi,
21. Hina, Madhya and Pravara Shddhi and Samsajana Krama accordingly
22. Detail knowledge of methods of Samsarjana Krama and its importance
23. Kavala and Dhumapana after vamana
24. Management of Ayoga, Atiyog and Vyapat of Vamana with Ayurveda and modern drugs
25. Parihara Vishaya and Kala for Vamana

26. Vamana Karmukata with Pharmaco-dynamics of Vamana

Virechana Karma

1. Etymology, definition and general considerations of Virechana
2. Importance of Vamana and Virechana as shodhana, Virechana better than Vamana
3. Necessity of Vamana prior to Virechana
4. Preparation of patients for Virechana after Vamana
5. Preparation of patients directly for Virechana
6. Properties of main Virechaka and Virechanopaga drugs, Classifications of Virechana drugs with definition, example and utility of each type
7. Indications of Vamana Karma
8. Contraindications of Virechana with reasons
9. Utility of Virechana for the specific conditions and stages of the disease
10. Internal Snehana for Virechana with diet
11. Management of 3 gap day with diet and importance of low Kapha for proper Virechana
12. Abhyanga and Svedhana as Purvakarma of Virechana
13. Management of Patients on the morning of Virechana
14. Virechana should be performed in empty stomach
15. Drug, dose, time, Anupana, sahapana and method of administration of Virechana and Virechanopaga preparations
16. Method of performing of Virechana Karma
17. Observations during Virechana, Vega and Upavega of Virechana and its counting, observations and preservation of feces and its weighing
18. Samyak, Ayoga and Atiyoga of Virechana
19. Laingiki, Vaigiki, Manaki and Antiki Shuddhi of Virechana
20. Hina, Madhya and Pravara Shddhi and Samsajana Krama accordingly
21. Detail knowledge of methods of Samsarjana Krama and its importance, and Tarpana krama and its importance
22. Management of Ayoga, Atiyog and Vyapat of Virechana with Ayurveda and modern drugs
23. Parihara Vishaya and Kala for Virechana
24. Virechana a Karmukata with Pharmaco-dynamics of Virechana
25. Applied anatomy and physiology of Gastrointestinal system related with Vamana and Virechana
26. Study of Vamana and Virechana related portions in classics with commentaries
27. Recent advances of researches on the effect of Vamana and Virechana
28. Scope of research for Vamana and Virechana.
29. Role of Vamana and virechana in promotion of health prevention and treatment of diseases

PAPER – III Basti Karma and Nasya Karma

Basti Karma

1. Etymology, definition and general considerations of Basti
2. Importance of Basti in Kayachikitsa and other branches of Ayurveda
3. Classifications of Basti
4. Drugs useful in Basti
5. Indications of Basti, its role at the various stages of diseases
6. Contraindications of Basti with reasons
7. Description of Basti yantras, Basti netra and Basti putaka and their Doshas. Modified Basti Yantra, their merits and demerits

8. Dose schedules of Niruha and Anuvasana basti

Niruha basti

Etymology, synonyms, definition and classifications and subclassifications of Niruha Basti and detailed knowledge of each type of Niruha Basti along with indications and contraindications and benefits
Contents of various types of Niruha Basti, their proportions, methods of mixing basti Dravya,
Relation of Virechana, Shodhana, Anuvasana Basti with Niruha Basti
Purvakarma for Niruha Basti; Pathya before, during and after Niruha Basti; all the aspects of administration of various Niruha Basti
Observations during and after Niruha Basti
Basti Pratyagamana,
Samyakyoga, Ayoga and Atiyoga Lakshana and Various Vyapat of Niruha Basti and their management according to Ayurved and Modern Systems of Medicines
Management during and after Niruha Basti
Pariharya vishaya and pariharakala,

Anuvasana basti

Etymology, synonyms, definition and classifications of Anuvasana Basti and detailed knowledge of each type of Anuvasana Basti along with indications and contraindications and benefits
Various types of Ghrita and Taila useful in Anuvasana Basti; Anuvasana Basti with Vasa and Majja along with their merits and demerits
Relation of Virechana, Shodhana, Niruha Basti, Snehana with Anuvasana Basti
Purvakarma for Anuvasana Basti; Pathya before, during and after Anuvasana Basti; all the aspects of administration of Anuvasana Basti including Kala
Observations during and after Anuvasana Basti
Anuvasana Basti Pratyagamana,
Samyakyoga, Ayoga and Atiyoga Lakshana and Various Vyapat of Anuvasana Basti and their management.
Management during and after Anuvasana Basti
Pariharya vishaya, Pathya and pariharakala for Anuvasana
Various combined basti schedules such as Karma, Kala, yoga Basti etc.
Detailed knowledge of Matra Basti
Detailed Knowledge of different basti formulations like Piccha Basti, Kshira Basti, Yapana Bastis, Madhutailika Basti, Erandamuladi Niruha Basti, Panchaprasrutika Basti, Kshara Basti, Vaitarana Basti, Krimighna Basti, Lekhana Basti, Vrishya Bsti, Manjishtadi Niruha Basti, Dashamula Basti, Ardhamatrika Basti, Sarva roghara Niruha Basti, Brimhana Basti, Vataghna Basti, Pittaghna Basti and Kaphaghna Basti etc, and their practical utility.

Uttara basti

1. Definition and Classification of Uttara Basti, its Netra and Putaka. Dose of Uttara Basti Sneha and Kashaya Basti. Different Uttara Basti Kalpanas in various diseases.
2. Detailed knowledge of Purvakarma and Administration of Uttara Basti in male and female, precautions, aseptic measures, complications and their management
Karmukata of Basti. Applied anatomy and physiology of colon, Pharmacodynamics of Basti.
3. Concept of 'Gut Brain' and its relevance to Basti Therapy.
4. Study of relevant portions of Basti in classics with commentaries.

Nasya Karma

1. Etymology, synonyms, importance and definition of Nasya
2. Nasya drugs according to various Samhita

3. Classifications and sub-classifications of Nasya with detailed knowledge of each type
4. Indications and contraindications of each type of Nasya with reasons
5. Drugs useful for Nasya with Dose and methods of preparations and their doses
6. Nasya Kala and Pathya before, during and after Nasya; Duration of different Nasyas
7. Purvakarma of each types of Nasya
8. Detailed knowledge of administration of each type of Nasya with management during and after Nasya.
9. Detailed knowledge of common Nasya formulations such as Shadabindu Taila, Anu taila, Kshirabala Taila, Karpasastyadi Taila, Bramhi Ghrita.
10. Samyak yoga, Ayoga and Atiyoga of each types of Nasya, its Vyapat and their management
11. Pashchata Karma; Role of Dhumapana, Kavala after Nasya,
12. Diet and Pathya before, during and after Nasya Karma
13. Pariharya vishaya, Parihara Kala,
14. Nasya Karmukata, Applied anatomy and physiology related to Nasa hi Sirso Dvaram, blood and nerve supply to nose, Shringataka marma, olfactory nerve and centers, aroma therapy, trans nasal administration of drug, recent advances in nasal drug delivery
15. Study of relevant portion in classics with commentaries

PAPER – IV Raktamokshana, Physiotherapy and Diseasewise Panchakarma

A. Raktamokshana-33 Marks

1. Definition, importance, classifications and detailed knowledge of each type of Raktamokshana with their methods of performance
2. General principles, indications, contraindications of Raktamokshana
3. Detailed knowledge of Jalaukavacharana: Indications and contraindications of Jalaukavacharana, various tyoes of Jalauka with their beneficial and harmful effects.
4. Purvakarma and method of Jalaukavacharana, observations and Pathya before, during and after Jalaukavacharana
5. Management during and after Jalaukavacharana
6. Symptoms of Samyak, Ayoga and Atiyoga and Vyapat of of Raktamokshana and their management with Ayurveda and Modern medicines.
7. Pariharya vishaya and Parihara kala
8. Karmukata of different types of Raktamokshana

B. Clinical Physical Medicine-33 Marks

1. Definitions and terminology
2. Biomechanics of human movements; Physiology of exercise
3. Treatment modalities used in Physical Medicine- general properties and detailed clinical use of each
 - a. Heat – general physiological properties and mode of action as a treatment agent, Forms of heat therapy – superficial and deep heating. General knowledge of Infrared, Paraffin Wax bath, short wave diathermy, electro magnetic therapy, ultra sound therapy, convection heating devices,
 - b. Cold as a therapeutic agent
 - c. Prescription of physical modalities and their applications in medicine.
4. Clinical use of massage, manipulation, stretching
5. Principles of occupational therapy, training in activities of daily living for rehabilitation, self-help devices (walking aids, wheelchairs, tricycles & modified vehicles), instrumental activities of daily living,
6. Physiotherapy exercises for Paralytical disorders, cervical spondylosis, frozen shoulder and slip disc.

C. Disease-wise Panchakarma-34 Marks

Role of Panchakarma in Different Stages of the following Diseases:

Jvara, Raktapitta, Madhumeha, Kushtha, Shvitra, Unmada, Apasmara, Shotha, Plihodara, Yakridaluodara, jalodara,, Arsha, Grahani, Kasa,Tamaka Shwasa, Vatarakta, Vatavyadhi, Amlapitta, Parinama Shula, Ardhavabhedaka, Ananta Vata,, Amavata, Sheetapitta, Shleepada, Mutrakruchchra, Mutrashmari, Mutraghata, Hrudroga, Pinasa, Drushtimandya, Pandu, Kamala, Sthaulya, Krimi, Madatyaya, Moorchcha, Padadari, Mukhadushika, Khalitya, Palitya,

Use of Various panchakarma Procedures in the following disorders -

Migraine, Parkinson's Disease, trigeminal neuralgia, Bell's palsy, cerebral palsy, Muscular dystrophy, hemiplegia, paraplegia, Lumbar Disc disorders, Spondylolisthesis, Ankylosing spondylosis, Carpel Tunnel Syndrome, Calcaneal Spur, Plantar fasciitis, GB syndrome, Alzhiemer's disease, Irritable Bowel Syndrome, ulcerative colitis, psoriasis, hypothyroidism, hyperthyroidism, hypertension, allergic rhinitis, , Eczema, diabetes mellitus, Chronic obstructive pulmonary Disease, Insomnia, Rheumatoid Arthritis, Gout, Osteoarthritis,multiple sclerosis, SLE, male & female infertility, cirrhosis of liver, Jaundice, General Anxiety Disorders,

Referance Books:

- | | | |
|----|---|--|
| 1 | Charak Samhita with commentary of Ayurved
Dipika by Chakrapanidatta and Jalpakalpa
taruby Gangadhara | Agnivesha |
| 2 | Sushrutha Samhita with the Nibhandha
Samgraha commentary of Dalhana and
Nyayachandrika panjika of Gayadasa on
nidansthana | Sushrutha |
| 3 | Ashtang Hridaya with Sarvanga sundara and
Ayurved rasayana commentaries
Ashtanga Sangraha with Shashilekha
commentery
Bhela Samhita
Kashyapa Samhita
Bhavaprakasha of Bhavamishra
Sharangadhara Samhita
Vangasen
Gadanigraha | Vagbhata
Vagbhata |
| 4 | Ayurvediya Panchkarma chikitsa | Dr Mukundilal Dwivedi |
| 5 | Panchkarma Vigyan | Dr Haridas Shreedhar Kasture |
| 6 | Illustrated Panchkarma | Dr.G Srinivasa Acharya |
| 7 | Ayurveda-Principles and Practice of
Panchakarma | Dr. Mandip and Dr Gurdip Singh |
| 8 | The Panchkarma Treatment of Ayurved with
Kerala Specialities | Dr. T.L. Devaraj |
| 9 | Panchkarma Therapy | Dr. R.H. Singh |
| 10 | Principles and practice of vasti | Dr. Vasudevan Nampoohiri and Dr.
L. Mahadevan |
| 11 | Claiton's Physiotherapy | |
| 12 | Teddy's Physiotherapy | |
| 13 | Harrison's Principles of Inernal Medicines | |
| 14 | Guyton's Physiology | |

22.Chhaya Avum Vikiran Vigyan

Paper-1 Fundamentals of Chhaya Avum Vikiran Vigyan (Radio-diagnosis & Imaging)

Part-A

Detail knowledge of principles of Ayurveda and their applied aspects, specially Panch Mahabhuta, Dosh, Dhatu, Mala, Panch Nidan, Prakriti, Shatkriyakaal, Praman, Chhya-Pratichchhaya , Prabha, , Rogi pariksha (Trividha, Shatvidha especially Darshan pariksha),their relevance with Chhaya avum Vikiran Vigyan.

-Study of Ayurvedic classics and modern Medical Science texts related to Chhaya avum vikiran vigyan

- Chhaya avum Vikiran vigyan as a means of Darshan priksha.

Part-B

- Infrastructure of an ideal Chhaya avum vikiran unit.
- Fundamental principles of Chhaya avum vikiran vigyan
- Detail knowledge of equipments (yantra) used in Chhaya avum Vikiran Vigyan.
- Dark room techniques
- Ionizing and non ionizing energies related to Chhaya avum Vikiran Vigyan - relevant hazards, prevention and precautions, their management by Ayurvedic and modern measurements.
- Trividh Karma –Poorva ,Pradhan avum Pashchat Karma in Chhaya avum Vikiran Vigyan
- Occupational physical disorders of consultants related to Radio-diagnosis and imaging.

Paper-2 Applied Anatomy, Physio-pathology and Procedures in Chhaya avum Vikiran Vigyan (Radio-diagnosis & Imaging)

Part-A

Applied Anatomy, Physiology & Pathology in Chhaya avum vikiran Vigyan (Radio-diagnosis & Imaging)

Detail knowledge of Ayurvedic and Modern applied radiological Anatomy (including sectional), Physiology and Pathology of the human body;

1. Sira(Vessels), Gaurya Sira, (Lymphatic channels), Mansa (Muscles), Snayu (Ligaments), Kandara (Tendons), Sandhi(Joints), Nadi(Nerve), Asthi(Bones), Strotas,Marma, Antahsraivi granthi (Endocrine glands) etc.
2. Urdhwajatrugata(Supraclavicular) parts-Kapaal(Skull),Karna(Ears),Chakshu(Eyes), Nasa(Nose), Paranasal sinuses, Lalagranthi(Salivary glands), Face, Greeva(Neck), Sushumna(Spinal cord) and Kaseruka (vertebrae), Mukha(Mouth), Danta(Teeth), Mastulunga(Brain), Lasika granthi(Lymph glands) etc.
3. Koshtha (Trunk) parts-Sushumna(Spinal cord) and Kaseruka(vertebrae).
 - a. Vaksha(Thoracic)parts-Phuphphus(Lungs),Hridaya(Heart)&Sira(Vessels), Shwashnalika (Trachea, Bronchi), Annamarg (Esophagus), Lymph nodes, Kooch (Breast), Hridayabandhan (Diaphragm)etc.
 - b. Udar(Abdominal)parts- Audaryyakalaa (Peritoneum) Aamashaya(Stomach) , Kshudrant (Smallintestine), Vrihadantra (Large intestine), Guda(Rectum and Anal canal), Aantrapuchchha (Appendix) , Yakrit(Liver), Tilam(Gall bladder), Billiary channels, Pleeaha(Spleen), Agnyashaya(Pancreas), Vrikka (Kidney),Gavini(ureter), Basti(urinarybladder), Shishna(penis),Paurushgranthi (prostate) ,Vrishan(testes),Shukrashaya (seminalvesicles),Dimbashaya(ovaries), Perineum Garbhashaya(uterus), Yoni, Dimbvahini(fallopian tubes), Lasika granthi (lymph nodes) etc.
4. Shakha-parts of upper and lower extremities.

Part –B Procedures in Chhaya avum Vikiran Vigyan (Radio-diagnosis & Imaging)

- Various routine and special, non-contrast and contrast radiography, Digital radiography, Radiographic positions and views.
- Various Ultra Sonographic procedures -Various diagnostic and therapeutic Ultrasonography [routine,,joint study, various Endo-USG, Obstetrics -Garbha vinishchaya (confirmation of pregnancy) , Masanumas Garbh vridhhi (fetal development), Garbha swastha (fetal well being) and Vyadhi (fetal diseases) ,Vikrita garbha (congenital anomalies) . Aparā (Placenta) , Nabhinadi darshan (umbilical cord),Garbhapatta (abortion) Aparā / Garbhaavayav Apaatan (Retained conceptual products), Gynaecology –Yonivyapat (gynaecological disorders), Bandhyatva (infertility) , Garbhashayabhransha (uterine prolapse)etc. Dopplers USG guided techniques and other advances.
- CT, MRI, Radionuclide scanning, PET and other recent advanced procedures in Radio-diagnosis & Imaging.
Mammography
Bone Densitometry
Interventional radiology

Paper 3 *Physics and Biology related to Chhaya avum Vikiran Vigyan(Radio diagnosis & Imaging)*

Part-A

- Physics of radiography, Digital radiography, Fluoroscopy, their application.
- Physics of ultrasonography, its applied aspect related to various U.S.G, Doppler procedures.
- Study of contrast materials used in Radio-diagnosis and imaging.

Part-B

- Physics of CT scan, its applied aspect, efficiency and limitations.
- Physics of MRI, its applied aspect, efficiency and limitations.
- Physics and its applied aspect related to other imaging procedures e.g. PET, Radio-Nuclides imaging etc.
- Biology related to Chhaya avum Vikiran Vigyan

Paper-4th *Applied Chhaya avum Vikiran Vigyan (Radio-diagnosis & Imaging)*

Part-A

Applied aspects of radiographic interpretation and reporting of various diseases related to systems, organs (as mentioned in paper-2nd, part-A) and metabolism.

Part-B

- Applied aspects of Ultrasonography, interpretation and reporting of various diseases related to system, organ (as mentioned in paper-2nd, part-A,) and metabolism, routine joint study, various Endo-USG. , Obstetrics -Garbha vinishchaya (confirmation of pregnancy) , Masanumas Garbh vridhhi (fetal development), Garbha swastha (fetal well being,bio-physical profile) and Vyadhi (fetal diseases) ,Vikrita garbha (congenital anomalies,2nd level obstretic USG) . Aparā (Placenta) , Nabhinadi darshan (umbilical cord),Garbhapatta (abortion) Aparā / Garbhaavayav Apaatan (Retained conceptual products), Gynaecology –Yonivyapat (gynaecological disorders), Bandhyatva (infertility) , Garbhashayabhransha (uterine prolapse)etc. Dopplers, USG guided techniques and other advances..
- Applied aspect , interpretation and reporting of CT scan, MRI scan and other advanced Radiological techniques.

- Application of Chhaya avum vikiran vigyan in context to Ayurvedic fundamentals, diagnosis, management and research.

Reference Books;

Shusruta Samhita	Relevant part
Charak Samhita	- do-
Astang Hridaya/Sangrah	- do-
Text Book of Radiographic Positioning and Related Anatomy	- By Kenneth L Bontrager, John P Lampignano
Radiographic interpretation to general practitioner	-W.H.O.
Procedures in diagnostic Radiology	- By T. Doyle, W. have, K. Thomson.
Radiographic positioning	- By Clark
Radiobiology for the Radiologist	- By Hall.Christensen's
Physics of Diagnostic Radiology	- By Curry T S , Dowdey J E , Murry R C
Farr's Physics for Medical Imaging	- By Penelope Allisy-Roberts , jerry Williams
Fundamental of Diagnostic Radiology	- By Brant.
Diagnostic Imaging	- By Federle
Diagnostic Imaging	- By Peter Armstrong , Martin Wastie , Ansrea Rockall
Gastrointestinal radiology	- R.L. Eisenberg
Uro-radiology	- T.Sherwood, A.J.Davidson, .B.Talner
Grainger and Allison's Diagnostic Radiology	-Text book of medical imaging
Text Book in Radiology and Imaging	- By D. Sutton.
Introduction to Vascular Ultrasonography	- By Zwiebel , Pellerito
Text book in Ultrasonography	- By Roumack
Manual of Medical Diagnostic Ultrasonography	- By W.H.O. Scientific group.
Computed Tomography & MRI of the whole body	- By Hagga.
Surface and Radiological Anatomy	- By A. Halim
X-Ray equipment for student Radiographers	- By DN and MO Chesney
Clinical Sonography , A Practical Guige	- By Roger C. Sanders ,
Tom Winter	
Ultrasonography in obstretics and gynaecology	-Callen
Standard Journals like Indian Journal of Radiology, Radiology,Radiological clinics of north America,British Journal of Radiology etc.	
Audio-visual aids	-CDs & DVDs

**M.D./M.S.-AYURVEDA PRELIMINARY
PAPER-I
RESEARCH METHODOLOGY AND MEDICAL STATISTICS
PART-A
RESEARCH METHODOLOGY**

1 Introduction to Research

- A. Definition of the term research
- B. Definition of the term anusandhan
- C. Need of research in the field of Ayurveda

2 General guidelines and steps in the research process

- A. Selection of the research problem
- B. Literature review: different methods (including computer database) with their advantages and limitations
- C. Defining research problem and formulation of hypothesis
- D. Defining general and specific objectives
- E. Research design: observational and interventional, descriptive and analytical, preclinical and clinical, qualitative and quantitative
- F. Sample design
- G. Collection of the data
- H. Analysis of data.
- I. Generalization and interpretation, evaluation and assessment of hypothesis.
- J. Ethical aspects related to human and animal experimentation.
- K. Information about Institutional Ethics Committee (IEC) and Animal Ethics Committee (AEC) and their functions. Procedure to obtain clearance from respective committees, including filling up of the consent forms and information sheets and publication ethics.

3 Preparation of research proposals in different disciplines for submission to funding agencies taking EMR-AYUSH scheme as a model.

4. Scientific writing and publication skills.

- a. Familiarization with publication guidelines- Journal specific and CONSORT guidelines.
- b. Different types of referencing and bibliography.
- c. Thesis/Dissertation: contents and structure
- d. Research articles structuring: Introduction, Methods, Results and Discussions (IMRAD)

5 Classical Methods of Research.

Concept of Pratyakshadi Pramana Pariksha, their types and application for Research in Ayurveda.
Dravya-, Guna-, Karma-Parikshana Paddhati
Aushadhi-yog Parikshana Paddhati
Swastha, Atura Pariksha Paddhati
Dashvidha Parikshya Bhava
Tadvidya sambhasha, vadmarga and tantrayukti

6 Comparison between methods of research in Ayurveda (Pratigya, Hetu, Udaharana, Upanaya, Nigaman) and contemporary methods in health sciences.

7. Different fields of Research in Ayurveda

Fundamental research on concepts of Ayurveda

- a. Panchamahabhuta and tridosha.
- b. Concepts of rasa, guna, virya, vipak, prabhav and karma
- c. Concept of prakriti-saradi bhava, ojas, srotas, agni, aam and koshta.

8. Literary Research-

Introduction to manuscriptology: Definition and scope. Collection, conservation, cataloguing.

Data mining techniques, searching methods for new literature; search of new concepts in the available literature.

Methods for searching internal and external evidences about authors, concepts and development of particular body of knowledge.

9. Drug Research (Laboratory-based)- Basic knowledge of the following:

Drug sources: plant, animal and mineral. Methods of drug identification.

Quality control and standardization aspects: Basic knowledge of Pharmacopoeial standards and parameters as set by Ayurvedic Pharmacopoeia of India.

Information on WHO guidelines for standardization of herbal preparations. Good Manufacturing Practices (GMP) and Good Laboratory Practices (GLP).

10. Safety aspects: Protocols for assessing acute, sub-acute and chronic toxicity studies. Familiarization with AYUSH guidelines (Rule 170), CDCSO and OECD guidelines.

11. Introduction to latest Trends in Drug Discovery and Drug Development

-Brief information on the traditional drug discovery process

-Brief information on the latest trends in the Drug Discovery process through employment of rational approach techniques; anti-sense approach, use of micro and macro-arrays, cell culture based assays, use of concepts of systems biology and network physiology

-Brief introduction to the process of Drug development

12. Clinical research:

Introduction to Clinical Research Methodology identifying the priority areas of Ayurveda

Basic knowledge of the following:-

Observational and Interventional studies

Descriptive & Analytical studies

Longitudinal & Cross sectional studies

Prospective & Retrospectives studies

Cohort studies

Randomized Controlled Trials (RCT) & their types

Single-case design, case control studies, ethnographic studies, black box design, cross-over design, factorial design.

Errors and bias in research.

New concepts in clinical trial- Adaptive clinical trials/ Good clinical practices (GCP)

Phases of Clinical studies: 0,1,2,3, and 4.

Survey studies -

Methodology, types, utility and analysis of Qualitative Research methods. Concepts of in-depth interview and Focus Group Discussion.

13. Pharmacovigilance for ASU drugs. Need, scope and aims & objectives. National Pharmacovigilance Programme for ASU drugs.

14. Introduction to bioinformatics, scope of bioinformatics, role of computers in biology. Introduction to Data base- Pub med, Medlar and Scopus. Accession of databases.

15. Intellectual Property Rights- Different aspect and steps in patenting. Information on Traditional Knowledge Digital Library (TKDL).



MEDICAL STATISTICS

Teaching hours: 80

- 1 **Definition of Statistics :** Concepts, relevance and general applications of Biostatistics in Ayurveda
- 2 **Collection, classification, presentation, analysis and interpretation of data** (Definition, utility and methods)
- 3 **Scales of Measurements** - nominal, ordinal, interval and ratio scales.
Types of variables – Continuous, discrete, dependent and independent variables.
Type of series – Simple, Continuous and Discrete
- 4 **Measures of Central tendency** – Mean, Median and Mode.
- 5 **Variability:** Types and measures of variability – Range, Quartile deviation, Percentile, Mean deviation and Standard deviation
- 6 **Probability:** Definitions, types and laws of probability,
- 7 **Normal distribution:** Concept and Properties, Sampling distribution, Standard Error, Confidence Interval and its application in interpretation of results and normal probability curve.
- 8 **Fundamentals of testing of hypotheses:**
Null and alternate hypotheses, type I and type 2 errors.
Tests of significance: Parametric and Non-Parametric tests, level of significance and power of the test, 'P' value and its interpretation, statistical significance and clinical significance
- 9 **Univariate analysis of categorical data:**
Confidence interval of incidence and prevalence, Odds ratio, relative risk and Risk difference, and their confidence intervals
- 10 **Parametric tests:** 'Z' test, Student's 't' test: paired and unpaired, 'F' test, Analysis of variance (ANOVA) test, repeated measures analysis of variance
- 11 **Non parametric methods:** Chi-square test, Fisher's exact test, McNemar's test, Wilcoxon test, Mann-Whitney U test, Kruskal – Wallis with relevant post hoc tests (Dunn)
- 12 **Correlation and regression analysis:**
Concept, properties, computation and applications of correlation, Simple linear correlation, Karl Pearson's correlation co-efficient, Spearman's rank correlation.
Regression- simple and multiple.
- 13 **Sampling and Sample size computation for Ayurvedic research:**
Population and sample. Advantages of sampling, Random (Probability) and non random (Non-probability) sampling. Merits of random sampling. Random sampling methods- simple random, stratified, systematic, cluster and multiphase sampling. Concept, logic and requirement of sample size computation, computation of sample size for comparing two means, two proportions, estimating mean and proportions.
- 14 **Vital statistics and Demography:** computation and applications - Rate, Ratio, Proportion, Mortality and fertility rates, Attack rate and hospital-related statistics
- 15 **Familiarization with the use of Statistical software** like SPSS/Graph Pad

PRACTICAL

100 marks

I. RESEARCH METHODOLOGY

Teaching hours 120

PRACTICAL NAME

- 1 **Pharmaceutical Chemistry**
Familiarization and demonstration of common lab instruments for carrying out analysis as per API
- 2 **Awareness of Chromatographic Techniques**
Demonstration or Video clips of following:
 - Thin-layer chromatography (TLC).
 - Column chromatography (CC).
 - Flash chromatography (FC)
 - High-performance thin-layer chromatography (HPTLC)
 - High Performance (Pressure) Liquid Chromatography (HPLC)
 - Gas Chromatography (GC, GLC)
- 4 **Pharmacognosy**
Familiarization and Demonstration of different techniques related to:-
Drug administration techniques- oral and parenteral.
Blood collection by orbital plexuses puncturing.
Techniques of anesthesia and euthanasia.
Information about different types of laboratory animals used in experimental research
Drug identification as per API including organoleptic evaluation
- 5 **Pharmacology and toxicology**
Familiarization and demonstration of techniques related to pharmacology and toxicology
- 6 **Biochemistry (Clinical)**
Familiarization and demonstration of techniques related to basic instruments used in a clinical biochemistry laboratory – semi and fully automated clinical analyzers, electrolyte analyzer, ELISA-techniques, nephelometry.
Demonstration of blood sugar estimation, lipid profiles, kidney function test, liver function test.
HbA1, cystatin and microalbumin estimation by nephelometry or other suitable techniques.
Interpretation of the results obtained in the light of the data on normal values.
- 7 **Clinical Pathology**
Familiarization and demonstration of techniques related to basic and advanced instruments used in a basic clinical pathology lab. Auto cell counter, urine analyzer, ESR, microscopic examination of urine.
- 8 **Imaging Sciences**
Familiarization and demonstration of techniques related to the imaging techniques.
Video film demonstration of CT-Scan, MRI-scan and PET-scan.
- 9 **Clinical protocol development**

II. MEDICAL STATISTICS

Practical hours:20

Statistical exercise of examples from Topic number 4, 5, 8-12, 14, 15.

Records to be prepared.

Distribution of marks (practical):

- | | |
|--|------------|
| 1. Instrumental spotting test | – 20 marks |
| 2. Clinical protocol writing exercise on a given problem | – 20 marks |
| 3. Records: | |
| 4. Research methodology | -10 Mark |
| 5. Medical statistics | -10 marks |
| 6. Viva- Voce | -40 Marks |

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M.D.-AYURVEDA PRELIMINARY1. AYURVED SAMHITA & SIDDHANTA (Ayurvedic Compendia & Basic Principles)

PAPER-II

THEORY- 100 marks

PART-A

**Practical- Viva-Voce-100
50 marks**

1. Learning and Teaching methodology available in Samhita- Tantrayukti, Tantraguna, Tantradasha, Tachchilya, Vadamarga, Kalpana, Arthashraya, Trividha Gyanopaya, teaching of Pada, Paada, Shloka, Vakya, Vakyartha, meaning and scope of different Sthana and Chatushka of Brihatrayee.
2. Manuscriptology - Collection, conservation, cataloguing, Critical editing through collation, reception (A critical revision of a text incorporating the most plausible elements found in varying sources), emendation (changes for improvement) and textual criticism (critical analysis) of manuscripts. Publication of edited manuscripts.
3. Concept of Bija chatustaya (Purush, Vyadhi, Kriyakaal, Aushadha according to Sushrut Samhita).
4. Introduction and Application of Nyaya (Maxims) - Like Shilaputrak Nyaya, Kapinjaladhikaran Nyaya, Ghunakshara Nyaya, Gobalivarda Nyaya, Naprishtah Guravo Vadanti Nyaya, Shringagrahika Nyaya, Chhatrino Gacchhanti Nyaya, Shatapatrabhedana Nyaya, Suchikatah Nyaya.
5. Importance and utility of Samhita in present era.
6. Importance of ethics and principles of ideal living as mentioned in Samhita in the present era in relation to life style disorders.
7. Interpretation and co-relation of basic principles with contemporary sciences.

PART-B

50 marks

1. Definition of Siddhanta, types and applied examples in Ayurveda.
2. Ayu and its components as described in Samhita.
3. Principles of Karana-Karyavada, its utility in advancement of research in Ayurveda.
4. Theory of Evolution of Universe (Srishti Utpatti), its process according to Ayurveda and Darshana.
5. Importance and utility of Triskandha (Hetu, Linga, Aushadh) and their need in teaching, research and clinical practice.
6. Applied aspects of various fundamental principles: Tridosha, Triguna, Purusha and Atmanirupana, Shatpadartha, Ahara-Vihara. Scope and importance of Pariksha (Pramana).
7. Importance of knowledge of Sharir Prakriti and Manas Prakriti.
8. Comparative study of Principles of Ayurveda and Shad Darshanas.

REFERENCE BOOKS:-

- | | | |
|---|---------------------|----------------------------------|
| 1 | Charak Samhita | Chakrapani commentary |
| 2 | Sushrut Samhita | Dalhana Commentary |
| 3 | Ashtanga Samgraha | Indu commentary |
| 4 | Ashtanga Hridaya | Arundutta and Hemadri commentary |
| 5 | Vaisheshika Darshan | Prashastapada Bhasya |
| 6 | Nyaya Darshan | Vatsyayan Bhasya Patanjala |
| 7 | Yoga Darshan | Vyas Bhasya |

8	Vedantsara	
9	Sarvadarshan Samgraha	
10	Bhartiya Darshan	Baldev Upadhyaya
11	Ayurved Darshanam	Acharya Rajkumar Jain

**M.D.-AYURVEDA PRELIMINARY
RACHANA SHARIR (Anatomy)**

PAPER-II

Theory 100 marks

PART-A

50 marks

1. Basic principles of Sharira, Purushavichaya, Rashi Purusha, Karma Purusha (Shad Dhatuj Purusha), Chaturvimshati Purusha, Ek Dhatu Purusha. Relevant principles described in the Sharirasthan of Sushrut Samhita, Charak Samhita, Ashtang Sangrah and Ashtang Hridaya.
2. Basic principles of Garbha Sharira in Ayurveda: Definitions of Garbha, Shukra Shonita Siddhanta, Dauhrida, Matrijadi Garbhotpattikar bhava.
1. Types of tissues, histological study of liver, spleen, uterus, kidney, endocrine glands, mammary gland, skin, tongue, lungs, bronchi, bones, muscles, cartilages and nervous tissue.

PART-B

50 marks

1. Paribhasha Sharira (Anatomical terminology)
2. Pramana Sharira – Anguli and Anjali Pramana, Sama pramana Sharira, Ayama – Vistara and their prognostic values.
3. Fundamental aspects of Asthi, Sandhi, Peshi Sharir.
4. Fundamental aspects of Sira, Dhamani, Srotas – Definitions, Siravedha, Avedhya Sira. Fundamental aspect of Srotomoola Sthana.
5. Fundamental aspects of Koshtha and Koshthang: Hridaya, Yakrit, Vrikka, phupphusa, Aantra, Pleeha, Adhivrikkagranthi, Basti, Paurushagranthi, Amashaya, Agnyashaya and Vrishana.
6. Fundamental aspects of Uttamangiya Sharir – Introduction to Nervous system - development, divisions, neuron–structure, types, functional anatomy.
7. Mrita shodhan (as per Sushruta) and Mrita Samrakshana (preservation method of human cadaver).

PRACTICAL

100 marks

Contents:

1. Practical study of bones
2. Practical study of organs
3. Practical study of surface and radiological anatomy.
4. Shava Vichhedana – detailed dissection of the whole body.
5. Practical study of location of Marma
6. Demonstration of histology slides (10 slides)

Distribution of marks (Practical)

- | | |
|---|------------|
| 1. Spotting | - 20 Marks |
| 2. Surface Anatomy | - 20 Marks |
| 3. Dissection | - 30 Marks |
| 4. Imaging Anatomy – Basic Principles and Application | - 10 Marks |
| 5. Viva-Voce | - 20 Marks |

REFERENCE BOOKS:

6. Relevant matters of Brihatrayee and Laghutrayee

7. PratyakshaShariram - GananathSen
8. AbhinavaShariram - Damodar Sharma Gaur
9. Parishadyam Sabdartha Shariram - Damodara Sharma Gaur
10. Brihat Shariram - P S Varier
11. Shiva Samhita
12. Gray's Anatomy - Latest Edition
13. Human Anatomy - B D Chaurasia
14. Cunningham's Companion to Manual of Practical Anatomy. Vol I, II & III
15. Developing Human - Keith L Moore & Persaud
16. Clinically oriented Anatomy - Keith L Moore
17. Clinically oriented Neuro Anatomy - Richard Snell
18. Surface and Radiological Anatomy - Halim
19. Grant's Methods of Anatomy - Grant
20. Grant's dissector - Grant
21. Human Embryology - I. B. Singh
22. Ayurvediya Human Anatomy - G. M. Kanthi

M.D.-AYURVEDA PRELIMINARY

3.KRIYA SHARIR

PAPER-II

Theory 100 Marks

PART-A

50 marks

1. Theory of Loka-Purusha Samya
2. Theory of Panchamahabhuta
3. Physiological aspects of Samanya – Vishesha siddhanta
4. Concepts of Tridosha and Triguna
5. Concept of Dhātu
6. Concept of Mala
7. Description of Ojas
8. Process of Ahara Parinama including Aharaparinamakara Bhava and Asta Ahara Vidhi Visayatana
9. Physiological importance of Agni, its classification and functions
10. Dhātuposana theories
11. Concepts of Atma, Manas and Indriya.
12. Concepts of Prakriti and Ashtavidha Sara.
13. Concept of Srotas

PART-B

50 marks

Description of essential and relevant understandings related to contemporary physiology, both general physiology and systemic physiology.

1. Essentials of cell physiology – organization of cell.
2. Membrane physiology- transport across cell membrane, action potentials and resting membrane potentials.
3. Homeostasis- negative and positive feedback mechanisms.
4. Genetic code, its expression and regulation of gene expression.
5. Essentials of cardiovascular physiology- cardiac cycle, regulation of heart rate and blood pressure.
6. Essentials of respiratory physiology- regulation of respiration-chemical and neural, gaseous exchange, transportation of gases.
7. Gastrointestinal physiology- various digestive juices and their actions, gastrointestinal hormones, enteric nervous system.
8. Nervous system physiology- ANS, somatic nervous system, reflexes, general and special sensations, higher mental functions, functions of brain, brainstem and spinal cord.
9. Blood: Blood cells-RBCs, WBCs, platelets, plasma proteins and immunity.
10. Muscle physiology: properties and mechanisms of contraction of skeletal, cardiac and smooth muscles.
11. Physiology of excretion- mechanism of urine formation, micturition.
12. Endocrine physiology: Classification of hormones, hormones secreted by pituitary, thyroid, parathyroid, adrenal glands, pineal, pancreas and their functions.

Study of male and female reproductive system: functions of reproductive hormones.

PRACTICAL

100 marks

Contents:

Ayurvedic practicals

Assessment of Prakriti

Assessment of Sara

Pramana Pariksha

Hematology

Hemoglobin estimation

Total RBC count

Total WBC count

Differential leukocyte count

Packed cell volume (PCV)

ESR

Bleeding time

Clotting time

Blood grouping and Rh typing

Urine examination -

Physical examination- Specific gravity and reaction of urine

Chemical examination

Albumin test

Sugar test

Ketone bodies

Bile salts and pigments

Distribution of marks (Practical)

- | | |
|-----------------------------|------|
| 1. Laboratory Practical | - 20 |
| 2. Human Experiment | - 15 |
| 3. Spotting | - 15 |
| 4. Prakriti Saradi pariksha | - 20 |
| 5. Practical Record | - 10 |
| 6. Viva-voce | - 20 |

REFERENCE BOOKS:

- | | |
|--------------------------------------|-----------------------------|
| 1. Ayurvediya Kriyasharir | - Ranjit Rai Desai |
| 2. Kayachikitsa Parichaya | - C. Dwarkanath |
| 3. Prakrit Agni Vigyan | - C. Dwarkanath |
| 4. Sharir Kriya Vigyan | - Shiv Charan Dhyani |
| 5. Abhinava Sharir Kriya Vigyana | - Acharya Priyavrata Sharma |
| 6. Dosha Dhatu Mala Vigyana | - Shankar Gangadhar Vaidya |
| 7. Prakrita Dosha Vigyana | - Acharya Niranjana Dev |
| 8. Tridosha Vigyana | - Shri Upendranath Das |
| 9. Sharira Tatva Darshana | - Hirlekar Shastri |
| 10. Prakrita Agni Vigyana | - Niranjana Dev |
| 11. Deha Dhatvagni Vigyana | - Vd. Pt. Haridatt Shastri |
| 12. Sharir Kriya Vigyana (Part 1-2) | - Acharya Purnchandra Jain |
| 13. Sharir Kriya Vigyana | - Shri Moreshwar Dutta Vd. |
| 14. Sharira Kriya Vijnana (Part 1-2) | - Nandini Dhargalkar |
| 15. Dosha Dhatu Mala Vigyana | - Basant Kumar Shrimal |
| 16. Abhinava Sharir Kriya Vigyana | - Dr. Shiv Kumar Gaur |
| 17. Pragyogik Kriya Sharir | - Acharya P.C. Jain |
| 18. Kaya Chikitsa Parichaya | - Dr. C. Dwarkanath |
| 19. Concept of Agni | - Vd. Bhagwan Das |

- | | |
|---|-------------------------------|
| 20. Purush Vichaya | - Acharya V.J. Thakar |
| 21. Kriya Sharir | - Prof. Yogesh Chandra Mishra |
| 22. Sharir Kriya Vigyana
Sunil Verma | - Prof. Jayaram Yadav & Dr. |
| 23. Basic Principles of Kriya-Sharir (A treatise on Ayurvedic Physiology) by
Panda | -Dr. Srikant Kumar |
| 24. Sharir Kriya – Part I & II
& Dr. Chobhe | - Dr. Ranade, Dr. Deshpande |
| 25. Human Physiology in Ayurveda | - Dr Kishor Patwardhan |
| 26. Sharirkriya Vignyan Practical Hand Book
Deshpande | - Dr.Ranade, Dr.Chobhe, Dr. |
| 27. Sharir Kriya Part 1&2
Dr.Wavhal | - Dr.R.R.Deshapande, |
| 28. Textbook of Physiology | - Gyton & Hall |
| 29. Review of medical physiology | - William Ganong |
| 30. Essentials Of Medical Physiology | - Sembulingam, K. |
| 31. Concise Medical Physiology | - Chaudhari, Sujit. K. |
| 32. Fundamental of Anatomy & Physiology | - Martini |
| 33. Principals of Anatomy & Physiology | - Tortora & Grabowski |
| 34. Human Physiology | - Richards, Pocock |
| 35. Samson Wrights Applied Physiology, Keele, Neil, joels | |
| 36. Brainstem Control of Wakefulness And Sleep | - Steriade, Mirce |
| 37. An Introduction to Human Physiology | - Green, J.h. |
| 38. Ancient Indian Medicine | - Kutumbiah P. |
| 39. Biographical History of Indian Medicine | - Srikanthamurthy KR |
| 40. Ayurveda Kriya Sharira | - Yogesh Chandra Mishra |
| 41. Textbook of Medical Physiology | - Indu Khurana |
| 42. Tridosha Theory | - Subrahmanya Shastri |
| 43. Statistics in Medicine | - K. Syamalan |

M.D.-AYURVEDA PRELIMINARY
4. DRAVYAGUNA VIGYAN(Materia Medica & Pharmacology)

PAPER-II

Theory 100 Marks

PART-A

50 marks

1.

Panchamahabhuta siddhanta, Samanya Vishesha siddhanta, Tridosha siddhanta. Extensive study on classifications of Dravya as described in Brihatrayi.

2. Applied aspects of Rasa, Guna, Virya, Vipaka and Prabhava
3. Applied aspects of Aushdha karma with reference to Sharngadhara and Bhavaprakasha
4. Importance of Namarupa vigyan and concept of basonyms and synonyms of Dravyas
5. Applied knowledge of Bhaishajya Prayoga (marga, kalpana, matra, anupana, sevan, kala etc.)

PART-B

50 marks

6. Basic principles of Desha pravichara, Dravya sangrahana (collection), Samrakshana (preservation)
7. Evolution of Dravyaguna vigyan with special emphasis on Nighantus
8. Prashasta bhesaj lakshana
9. Profound knowledge on applied aspects of Agrya aushadha
10. Methodology of studying controversial, pratinidhi (substitute), apamishrana (adulterant) and unidentified dravya
11. Pharmacognosy and its relevance in Dravyaguna vigyan
12. An integrated study of Charakokta Bhesaj pariksha and scientific method of drug evaluation with special reference to quality, safety and efficacy
13. Brief knowledge and importance of clinical pharmacology
14. General principles of various good cultivation practices, collection practices, storage practices and manufacturing practices
15. Pharmacovigilance and ADR issues
16. Knowledge on the Ayurvedic Pharmacopoeia of India, The Formulary of India and international pharmacopoeias

PRACTICAL

100 marks

Contents:

1. Field visits for the Identification of important classical medicinal plants (Minimum two visits to neighboring forest areas)
2. Macroscopic and microscopic identification of minimum two plants of each of prayojyanga (useful parts of plants)
3. Preliminary study of pharmacoepial standards (API) of minimum 5 plants
4. Minimum two experiments on Animals

Distribution of marks (Practical)

1. Herbarium sheets -10 Marks
2. Practical of macroscopic and microscopic identification of prayojyanga (one part of the plant) -30 Marks
3. Practical record book of pharamcopoeial standards and animal experimentations -10 Marks
4. Spotting -30 Marks
5. Viva-voce -20 Marks

REFERENCE BOOKS:

1	Abhinav Buti Darpan (Vol.1-2)	-	Vd. Roop Lal Vaishya
2	Aushadna Vigyna Shastra	-	Acharya Pt. Vishvanatha Dwidevi
3	Ayurvediya Aushadnkarma vigyana	-	Acharya V.J. Thakur
4	Bedi Vanaspati Kosha	-	Prof. Ramesh Bedi
5	Bhaishajyaguna Vigyana	-	Dr. Alakhnarayan Singh
6	Bhav Prakash Nigantu (English)	-	Shreekanthamurti
7	Bhav Prakash Nighantu	-	With Vd. Krishna Chandra Chunekar commentary
8	Bhrinad dravyagunadarsha	-	Mahendra Kumar Shastri
9	Classical Uses of Medicinal Plants	-	Acharya Priyavrata Sharma
10	Controversial Medicinal Plants	-	Vd. G. Bapa Lal
11	Dalhana Ka Dravyaguna Shastra Ke Kshetra Me Yogadana	-	Vd. Shiv Kumar Vyas
12	Dravyaguna Kosha	-	Acharya Priyavrata Sharma
13	Dravyaguna Sutram	-	Acharya Priyavrata Sharma
14	Dravyaguna Vigyana	-	Dr. Gyanendra Pandey
15	Dravyaguna Vigyana(Vol. 1-2)	-	Acharya Yadavji Tikram Ji
16	Dravyaguna Vijyana	-	Dr. V.M. Gogate
17	Dravyaguna Vigyana (Vol. 1-5)	-	Acharya Priyavrata Sharma
18	Dravyaguna Shastrum	-	Vaidya G.A. Phadake
19	Dravyaguna Vijyana	-	Dr. A.P. Deshpande
20	Dravyagunavijnana basic Principles	-	Prof.D.S.Lucas
21	Forgotten Healers (Indian Medicinal Plants)	-	Dr. Prakash Pranjape
22	Glossry of Vegetable Drugs in Bhrittrayis	-	Thakur Balwant Singh & Vd. Krishna Chandra Chunekar
23	Introduction to Dravyaguna	-	Acharya Priyavrata Sharma
24	Kriyatamka Aushadi Parichaya	-	Acharya Pt. Vishvanath Dwidevi
25	Materia Medica	-	Acharya Ghosh
26	Nighantu Adarsh (Vol. 1-2)	-	Vd. Bapa Lal
27	Pharmacological basis of Medical Practice	-	Goodman & Gillman
28	Pharmacology and Pharmacotherapeutics	-	Satoskar Bhandarkar & Ainapure
29	Prayogatamaka Dravyaguna Vigyana	-	Dr. Maya Ram Uniyal

30	Priya nighantu	-	Acharya Priyavrata Sharma
31	Raspanchaka/Dravyaguna Siddhanta	-	Prof. Shivcharan Dhyani
32	System of Plant Nomenclature in Ayurveda	-	Dr. Gyanendra Panday
33	Text Book of Pharmacology	-	Trees & Valis
34	Textbook of Dravyaguna	-	Dr.K.Nishteswar
35	Unani Dravyaguna Vigyana	-	Hakim Daljeet Singh
36	Useful parts of Charaka, Sushrut, and Vagbhata.	-	
37	Uttarakand Ki Vanaspatiya	-	Dr. Gyanendra Pandey
38	Vanoaushadi Darshika	-	Thakur Balwant Singh
39	Vanoaushadi Nidarshika	-	Dr. Ram Sushil Singh
40	Vedic Vanaspatiyan	-	Dr. Dinesh Chandra Sharma
41	Pharmacopia of India –all the volumes		
42	Database on medicinal plants all the volums of CCRAS		
43	Aurveda formulary of india – all the volums		
44	All the nighantoos		
45	Laghutrayi		

M.D.-AYURVEDA PRELIMINARY
5. RASA SHASTRA AND BHAISHAJYA KALPANA
(Iatrochemistry & Pharmaceuticals Science)

PAPER-II

Theory 100 marks

PART-A

50 marks

1. Fundamental principles of Rasa Shastra and Bhaishajya Kalpana, introduction to Rasachikitsa, Ashuddha and Apakwa Bhasma-sevan Dosha and its management, introduction to Aushadha Sevan Kaal and Prayoga Marga (routes of administration).
2. Introduction to basic principles of Aushadha Yoga (formulations).
3. Classification of Rasa Dravya - concept and relevance.
4. Introduction to principles of Aushadha Nirmana, concept of Shodhan, Marana, Jarana, Murcchhana, Sattvapatan and Amritikarana.
5. Concept of Kashaya, Panchavidha Kashaya and other Kalpana.
6. Concept of Rasashala, Rasa Mandapa with introduction to pharmacy in accordance with the Good Manufacturing Practices (GMP).
7. Critical study of Rasa Ratnasamuchchaya, Rasendra Chintamani, Rasa Tarangini, Sharngadhara Samhita, Chakradutta and Bharat Bhaishajya Ratnakara with special reference to Aushadha-Nirmana.

PART-B

50 marks

1. Introduction to methods of analytical, toxicity, experimental and clinical validation of classical and proprietary Ayurvedic formulations.
2. Introduction to new dosage forms.
3. Introduction to advance instruments of analysis like XRD, XRF, SEM-E-Dax, ICP analysis, Chromatography: TLC, gas chromatography, HPTLC, concept of Nanotechnology and its relevance to Aushadha-Nirman.
4. Concept of Pharmacopoeia and Formulary with introduction of 'The Ayurvedic Pharmacopoeia of India' (API) and 'The Ayurvedic Formulary of India' (AFI).
5. Introduction to databases of medicinal plants published by CCRAS, ICMR and others.

PRACTICAL

100 marks

Contents:

1. Shodhan, Marana, Amritikarana of Rasa Dravya (10 practicals)
2. Preparation of different dosage forms (10 forms)
3. Pharmacopoeial standards of raw and prepared drugs (20 practicals)

Raw Materials

1. Minerals and Metals

Mineralogical Identification

1. Physical form - Crystal and Amorphous
2. Hardness on Moh's scale
3. Brittleness test
4. Fracture and Cleavage
5. Streak test
6. Luster

Mineralogical Identification

2. Plant Material

Macroscopic and Microscopic examination

- a. Organoleptic testing
- b. Estimation of Foreign materials
- c. Microbial load
- d. Moisture content
- e. Determination of ash value - total, water soluble and acid Insoluble ash
- f. Specific gravity
- g. Solubility- water and alcohol
- h. Extract values- water and alcohol
- i. TLC
- j. Determination of optical density
- k. Refractive index
- l. Aflatoxins
- m. Limit tests for heavy metals
- n. pH estimation

Prepared dosage forms:

1. Solid dosage forms

Rasaushadhi

- a) Bhasma and Pishti Pariksha
- b) Determination of Particle size
- c) Limit tests for heavy metals
- d) Determination of moisture content, specific gravity, pH and acid value.

Kasthaushadhi

a. Powders (Churna)

1. Particle size
2. Bulk density
3. Solubility
4. Estimation of Foreign material
5. Microbial load
6. Moisture content
7. Determination of ash value - total, water soluble and acid insoluble ash
8. Solubility - water and alcohol
9. Extract values - water and alcohol
10. TLC
11. Determination of Optical density
12. Refractive Index
13. Aflatoxins
14. Limit tests for Heavy metals
15. pH Value estimation

b. Tablets

1. Uniformity in weight and size
2. Tablet hardness
3. Tablet friability
4. Tablet disintegration
5. Tablet dissolution

c. Semisolid dosage forms

- a. Moisture content
- b. Sugar content
- c. Microbial load

d. Liquids

- pH value
- Specific gravity
- Determination of refractive index
- Acid value
- Viscosity
- Saponification value
- Iodine value

Note:

- All practicals should be performed in accordance with Authoritative Text Books of Schedule-I of D.C.Act-1940.
- All practicals related to Pharmacopoeial Standards should be performed in accordance with Methods Published in Protocol for testing of ASU Medicines and Laboratory Guidelines for the Analysis of Ayurveda & Siddha Formulations published by Deptt. of AYUSH, Government of India.

Distribution of marks (Practical)

- Practical Record Book - 10 Marks
- Practicals related to Preparation of Drugs
 - Major practical- one - 20 Marks
 - Minor practical- one - 10 Marks
- Drug analysis
 - Major practical- one - 20 Marks
 - Minor practical- one - 10 Marks
- Spotting - 10 Marks
- Viva-voce - 20 Marks

REFERENCE BOOKS:

1. Rasahridaya Tantra
2. Rasarnava
3. Rasaratna Samuccahaya
4. Ayurved Prakasha
5. Rasendrachudamani
6. Rasendra Chintamani
7. Rasatarangini
8. Rasapraksha Sudhakar
9. Rasamrita
10. Rasa Chandanshu : CCRAS Publication
11. Sharangadhara Samhita
12. Sharangadhara Darpan (BP Pandey)
13. Bhavaprakasha
14. Yoga Ratnakara
15. Bhaishajya Ratnavali
16. Siddha Bhaishajya Manimala
17. Bharat Bhaishajya Ratnakara
18. Rasayoga Sagara
19. Siddha Bhaishajya Manimala
20. Sahasrayoga
21. Siddha Yoga Sangraha – Yadavaji Trikamji Acharya
22. Vaidyaka Paribhasha Pradeepa
23. Ayurvediya Aushadhikarana – Puranik and Dhamanakar
24. Dravyaguna Vijnan Part - 1 and 2 - Yadavji Trikamji

25. Chakradatta - Ratnaprabha, Relevant Parts from Charaka Samhita, Sushruta Samhita, Kashyapa Samhita, Ashtanga Sangraha, Ashtanga Hridaya,
26. Remington: Science and Practice of Pharmacy
27. Theory and Practice of Industrial Pharmacy – Leon Lachman *et al*
28. Clinical Pharmacology, KD Tripathi
29. Clinical Pharmacology, Lawrence Benette
30. Drug Discovery and Evaluation (Pharmacological assays) HG Vogel
31. Pharmacological Basis of therapeutics – Goodman and Gilman
32. Data Base of Medicinal Plants of CCRAS
33. Quality and Standards of Medicinal Plants – ICMR publication
34. Quality Control of Ayurvedic Drugs – PLIM, Gaziabad
35. Ayurvedic Pharmacopeia of India
36. Ayurvedic Formulary of India
37. Indian Pharmacopeia
38. British Pharmacopeia
39. United States Pharmacopeia
40. Pharmacopeia Codex
41. Current Good Manufacturing Practices
42. Drugs and Cosmetic Act 1940 and Rules 1945 with latest amendments
43. Drugs and Magic remedies (Objectionable advertisement) Act-1954
44. Prevention of Food Adulteration (PFA) act
45. Laws pertaining to Narcotics
46. Factory and Pharmacy Acts
47. Consumer Protection Act -1986
48. Brief information on the peer reviewed journals, official websites and other official search engines along with their links (related with the subject)
49. Rutleys Elements of Mineralogy
50. Bhasma Vigyaniam
51. Kupipakva Vigyaniam
52. Anupana Manjari

M.D.-AYURVEDA PRELIMINARY
6. AGADTANTRA AVUM VIDHI VAIDYAKA
(Toxicology & Forensic Medicine)

PAPER-II

Theory 100 marks

PART-A

50 marks

1. Introduction to Agadatantra, its sequential development, traditional and contemporary toxicology.
2. Examination of poisons as per contemporary and Ayurvedic methods.
3. Ancient and contemporary classification of Visha.
4. Knowledge about Sthavara visha, Jangama visha and Kritrima visha, their clinical and pathological manifestations and management.
5. Garavisha and Dushi visha, signs, symptoms and management with contemporary relevance.
6. Vishajanya Janapadodhvamsaniya Roga (community health problems due to poisons) - environmental pollution, water pollution, soil pollution, air pollution etc, their features and management according to ancient and contemporary concepts.
7. Concept of Viruddhahara with contemporary views.
8. Definition of Vyavahara Ayurveda.
9. Fundamentals of Vyavahara Ayurveda. Courts of law in India and legal procedures.
10. Chathurvinshati upakrama (24 management procedures).

PART-B

50 marks

1. Introduction to Forensic medicine.
2. Techniques of pathology, pharmacology, pharmacognosy and microbiology used in toxicology.
3. Death and its medico-legal aspects (Medical Thanatology), Medico-legal autopsy, Legal procedures in clinical forensic medicine.
4. Forensic Science Laboratory:- Structure and functions
5. Introduction to Medical Jurisprudence.
6. Laws related to medical profession. Ancient practice of medical jurisprudence in india.
7. Ancient and contemporary fundamentals of medical ethics.
8. Madya visha (Alcoholism).
9. Diagnosis and Management of food poisoning.
10. General and Emergency medical management of poisoning including preparation, administration and complications of antidotes, antivenoms, antisera.
11. Management of the toxic manifestations caused by the contact poisons (paduka, vastra, abhushana, mukhalepa- vishabadha etc).
12. Diagnosis and management of dermatological manifestations of Visha.
13. Death due to poisoning, duty of physician in poisoning and cases of suspected poisoning.
14. Post mortem findings in poisoning.

PRACTICAL

100 marks

Contents:

Clinical Postings

Case records – 20 cases (Postmortem/ poisoning/dermatological/medico legal cases)



Distribution of marks (Practical)

1. Case records (20 Cases) - 20 Marks
2. Bedside clinical case taking
3. Long Case - 20 Marks
4. Short Case - 10 Marks
5. Identification of specimens, models and equipments of jurisprudence importance. - 15 Marks
6. Spotting related to Visha, Upavisha and other poisonous drugs - 15 Marks
7. Viva-voce -20 marks

REFERENCE BOOKS:

1. Useful Portion of Charak-Sushrut-Vagbhata
2. Dravyaguna Vigyan - Acharya Yadavji
3. Aushadhighunadharm Shastra - Pt Visvanath Dvivedi
4. Kriyatmat Aushada parichaya Vigyan - Pt Visvanath Dvivedi
5. Ayurvedic Vyadhi Vigyan - Acharya Yadavji Trikamji
6. Madhavanidan with Madhukosha commentary
7. Sharangadhara Samhita
8. Yogaratanakara
9. Aushadhighunadharm Shastra - PtGangadhara Shastri Gune
10. Rasendracintamani
11. Rasaratna samuchhaya
12. Vishavigyan - Dr. Krishna Kumar
13. Related matter of Kautilya Artha Shastra
14. Harmekhlatantra
15. Anupana manjari
16. Ayurvedprakash
17. System of clinical Medicine - Savil
18. Forensic Pharmacy -B.M. Mhithai
19. Hand book of Forensic Medicine and toxicology - Dr. P.V. Chadha
20. Viva Forensic Medicine and toxicology - L.C. Gupta
21. Forensic Medicine and Ethics - J.P. Narena
22. Modi's Medical Jurisprudence and Toxicology
23. The essentials of forensic medicine and toxicology -Dr.K.S. Narayan Reddy
24. Medical Laws and Ethics - Dr. H.S. Mehta
25. M.R.K. Krishnan's Handbook of Forensic Medicine
26. Text book of Medical Jurisprudence and Toxicology - Dr. C.K. Parikh
27. Atlas of Forensic Medicine - Dr. Tomio Watenbe
28. Medico legal Post Mortems (Atlas) - Dr. Parikh and Others
29. Textbook of Forensic Medicine and Toxicology - Dr.V.V. Pillay
30. Textbook of Forensic Medicine and Toxicology - Dr. Karmakar
31. Textbook of Forensic Medicine and Toxicology - Dr. Singhal
32. Textbook of Forensic Medicine and Toxicology - Dr. Krishnan Vij
33. Forensic Pathology - Dr. Bernard Knight
34. Textbook of Forensic Medicine and Toxicology - Lyon's
35. Pocket picture guide to Forensic Medicine - Gower's Medical Publication
34. Forensic Medicine - Simpson Knight
35. Taylor's Principles and Practical of Medical Jurisprudence - J and A Churchis
36. Doctor and Law - Singhal
37. Textbook of Toxicology - Singhal

38. Medicine Harrison's Principal of Internal Medicine
39. Agad Tantra - Dr. Shekhar Namboodri
1. Modern Medical Toxicology - Dr. V.V. Pillay
2. Critical care toxicology - Bruent Wallace
3. Diagnosis and Management of common poisoning- Agarwal wali
4. Colour Atlas of Forensic Medicine - Govindaiah
5. Guidelines of poisons - W.H.O.
6. Doctors patients relationships - Dr. Lavekar
7. Bhavaprakasha.
8. Vishavaidya Jyotsnika -- English translation By VPSV Ayurveda college, Kottakkal.
9. Lakshnamritham.
10. Toxicology, Ayurvedic perspective - VPSV Ayurveda college, Kottakkal
11. Text book of Agadatantra - Edited By Dr Huparikar, Dr. Joglekar
12. Agadatantra ki Pathyapustaka - Edited By Dr Huparikar, Dr. Joglekar
13. Vyavahar Ayurveda Vigyanam - Dr. Indramohan Jha (Sachchan)
1. Forensic Medicine - Dr. B. Umadathan
2. Visha Chikitsa - Dr. M. Balakrishnan Nair
3. Park Text book of Preventive and Social Medicine. - K. Park
4. Environmental Science and Biotechnology - Theory and Practice
- A.G. Murukesan & C. Rajakumari
5. Veterinary Toxicology - Dr. Satish K. Gargi
6. Guide to Drinking Water Quality (3 Volumes) - WHO Publication
7. A short Text Book of Medical Entomology - H.S. Bhatti, R. Sehgal, R.C. Mahajan.

M.D.-AYURVEDA PRELIMINARY
8. ROGA NIDANA AVUM VIKRITI VIGYAN
(Pathology and Diagnostic Procedure)

PAPER-II

Theory 100 marks

PART-A

50 marks

1. Understanding of Samprapti of diseases in Charaka Nidana Sthana in contemporary context
2. Clinical aspects of Dosha, Dhatu, Upadhatu, Mala, Agni, Ama, Srotas and Indriya
3. Understanding of the role of Trividha Avasthapaka in the vitiation of Dosha
4. Concept of Nanatmaja and Samanyaja Vikara
5. Clinical application of Avarana in diagnosis of various diseases
6. Clinical application of Shatkriyakala in diagnosis of diseases.
7. Clinical and applied aspects of concept of Upadrava and Arista

PART-B

50 marks

1. Ayurvedic interpretation of various laboratory investigations to derive treatment principles.
2. Interpretation of various Rogi Bala and Roga Bala technique to plan Chikitsa Sutra
3. Clinical examination of Deha Bala, Roga Bala, Agnibala And Chetas Bala
4. Knowledge of current diagnostic tools like ECG, X-Ray, CT scan, MRI and USG

PRACTICAL

100 marks

Contents:

1. Duty in hospital OPD and IPD.
2. Duty in pathology laboratory.
3. Case taking – 25 cases
4. Performance of pathology and biochemistry practicals – 10 cases
5. Interpretation of ECG, EEG, X-ray, CT-Scan, MRI and USG

Distribution of marks (Practical)

- | | |
|--|------------|
| 1. Case record (25 Cases) | - 10 marks |
| 2. Bed side clinical case taking | |
| 3. Long case | - 20 Marks |
| 4. Short case | - 10 Marks |
| 5. Laboratory Practical | - 20 Marks |
| 6. Interpretation of ECG, EEG, X-ray, CT-Scan, MRI and USG | - 10 Marks |
| 7. laboratory experiment record | - 10 marks |
| 8. Viva-voce | - 20 Marks |

REFERENCE BOOKS:

1. Madhav Nidan (Madhukosha Commentary)
2. Relevant portions of Charak Samhita, Sushrut Samhita and Vagbhata
3. Doshakaranatwa Mimamsa - Acharya P.V. Sharma
4. Nadi pariksha - Vb Athavale
5. Nadi Pariksha – - GP Upadhyay
6. Rogi Pariksha vidhi - Acharya Priyavrata Sharma
7. Nidan Panchak - Shivcharan Dhyani

8. Vyadhivigyan I and II - Yadav Thrikamji
9. Ayurvediya Roga Vargikaran - Vd. Ramanat Vd. Gurdip Singh
10. Ayurvediya Nidan Evum Chikitsa Ke Siddhanta - Prof. Ram Harsh Singh
11. Clinical methods in Ayurveda - K. R. S. Murthy
12. Parameswarappa's Ayurvediya Vikriti Vigyan & Roga Vikriti Vigyan - Dr. P.S. Byadgi.
13. Oxford Handbook of Clinical Examination and Practical Skills
14. Symptoms & Signs in Clinical Medicine - Chamberlains
15. Hutchison's Clinical Methods
16. Bedside Clinics in Medicine Part- I & II - Kundu
17. Practical Pathology - Dr. K. Uma Chaturvedi
18. Medical Laboratory Technology - R. Sood
19. Clinical Diagnosis and Management by Laboratory methods - Todd, Sanford and Davidson

M.D.-AYURVEDA PRELIMINARY
10.KAYACHIKITSA
(General Medicine)

PAPER-II

Theory- 100 marks

PART A

50 marks

1. Understanding of fundamental concepts of Kayachikitsa like Vriddhi and Kshaya of Dosha, Dushya, Mala with Amshaamsha Kalpana. Srotodushti, Khavaigunya, Agni, Ama (Saama and Nirama Dosha, Dhatu & Mala). Aavarana, Rogamarga, Ashayapakarsha, Dosha Gati, Kriyakala. Aushadha Sevana Kala, Anupana, Pathya-Apathya and their scientific relevance during health and disease.
2. Detailed knowledge of Rogi Roga Pariksha including detailed history taking and systemic examination of patient. Clinical implementation of Dwividha Pariksha, Trividha Pariksha, Chaturvidha Pariksha, Panchavidha Pariksha, Shadvidha Pariksha, Ashtavidha Pariksha, Dashvidha Pariksha Bhavas and Prakriyadi Dashvidha Pariksha.
3. Principles of Kayachikitsa in disease management including Shodhana, Shamana and Naimittika Rasayana.
4. Introduction of the basic principles of Modern medicine, Homeopathy, Unani, Siddha, Tibetan Medicine, Yoga and Naturopathy and their relevance in light of the basic principles of Ayurvedic medicine.

PART B

50 marks

1. Chikitsa Siddhanta of Pranavaha, Annavaaha, Udakavaha, Rasadi Dhatuvaha, Malavaha & Manovaha Srotovikara.
2. Emergency medicine: Acute Severe Asthma, pulmonary oedema, myocardial infarction, cerebro-vascular accidents, water and electrolyte imbalance, haemorrhage, syncope, seizure, coma, hyperpyrexia, hypertensive encephalopathy.
3. Knowledge of conducting various medical procedures like infusions, tapping, lumbar puncture, Ryle's tube insertion, catheterization, tractions, water seal drainage, Cardio Pulmonary Resuscitation.
4. Basic knowledge of underlying principles of ECG, TMT, echo cardiography, vascular doppler studies, EEG, EMG, X-Ray, USG, CT scan, MRI, PET and their interpretation.
5. Knowledge of common Ayurvedic formulations and preparations used in treatment:
Churna- Triphala, Sitopaladi, Lavanbhaskara, Hingvashtaka, Avipattikara, Gangadhara, Shaddharana, Sudarshana, Panchasakara, Ajmodadi.
Kashaya- Dashamula, Rasnasaptaka, Asanadi, Pathyadi, Phalatrikadi, Punarnavashtaka, Gojivhadi, Mahamanjishthadi, Drakshadi Kashaya.
Asavas-Arista- Amritarishta, Kanakasava, Chitrakasava, Saraswatarishta, Ashwagandharishta, Chandanasava.
Vati- Sanjivani, Chandraprabha, Agnitundi, Chitrakadi, Khadiradi, Vyoshadi, Shankha Vati, Shiva Gutika.
Guggula-Kalpana-Triphalaguggula, Kaishoraguggula, Trayodashangaguggula, Simhanadaguggula, Yogarajaguggula, Gokshuradi guggula, Kanchanaraguggula.
Rasaushadhi- Tribhuvanakirti Rasa, Arogyavardhini Rasa, Shwasakuthara Rasa, Rasamanikya Rasa, Smritisagara Rasa, Lakshmililasa Rasa, Sutshekhara Rasa, Pravala Panchamrita Parpati, Hemagarbhapottali Rasa.

Taila- Mahanarayana Taila, Pindataila, Prasarinyadi Taila, Ksheerabala Taila, Brihat Saindhavadi Taila, Panchaguna Taila, Amritadi Taila, Marichyadi Taila, Mahamasha Taila.

Ghrita- Mahatriphaladi Ghrita, Brahmi Ghrita, Panchtikta Guggulu Ghrita, Sukumara Ghrita, Dadimadya Ghrita, Kantakari Ghrita, Kalyanaka Ghrita.

Lehya- Chyavanaprasha Avaleha, Kushmanda Avaleha, Ashwagandha Avaleha, Agastya Hareetaki Rasayana, Drakshavaleha, Vasavaleha, Amrita-Bhallataka Rasayana.

PRACTICAL

100 marks

Content:-

Daily hospital duties in OPD, IPD and casualty

Bed-side case taking – 25 patients

Distribution of marks

(practical):

1. Case records of 25 Patients in detail 20 marks
2. Bedside clinical case taking-
Long case 20 marks
Short case 10 marks
3. Medical procedures/laboratory work 15 marks
4. Instruments and spotting 15 marks
5. Viva voce 20 marks

REFERENCE BOOKS-

- Charak Samhita -Cakrapanidutta commentry
Sushrut Samhita -with all available commentaries.
Ashtang Samgraha -Indu commentary
Ashtang Hridaya -Arundutta and Hemadri commentry
Cikitsadarsha - Pandit Rajesvardutta Shastri
Kayachikitsa - Ramaraksha Pathak
Rog Pariksha Vidhi - Priyavrat Sharma
Panchakarma Vigyan - Haridas Sridhar Kasture
Ayurved Nidan Chikitsa Siddhanta - Prof. R.H.Singh.
Kayachikitsa Vol. I-IV. - Prof. Ajay Kumar
Davidson's Principles and Practice of Medicine.
API Text Book of Medicine.
Harrison's Text Bok of Medicine.
Cecil Text Book of Medicine.
Relevant texts of concerned subjects.

M.D.-AYURVEDA PRELIMINARY
13.PANCHKARMA
(Five Therapeutic proedure)

PAPER-II

Theory- 100 marks

PART A

50 marks

1. Chikitsa and its classifications; Antah-Parimarjana and Bahir-Parimarjana Chikitsa
2. Principles of Chikitsa, Kriyakal, Shadvidha and Dvididha Upakrama and role of Panchakarma therein.
3. Applied aspects of Trividha, Shadvidha, Ashta Vidha and Dasha Vidha Pariksha.
4. Applied anatomy and physiology of cortex, cranial and peripheral nerves. Methods of physical examinations of central nervous system: sensory system, motor examination-muscle power and tone, superficial and deep reflexes, difference of upper and lower motor neuron lesions. Tremors and coordination.
5. Functions of various single muscles and groups of muscles, applied anatomy and physiology of joints. Methods of examination of locomotor system. Differential diagnosis of Amavata (rheumatoid arthritis), Vatarakta (gout) and Sandhivata (osteoarthritis). Examination of lumbar and cervical disorders including Gridhrasi (sciatica) and Vishvachi (Brachial neuralgia).
6. Applied anatomy and physiology of cardiovascular and respiratory systems, functions of capillaries and its permeability. Methods of examination of respiratory and cardiovascular system. Interpretation of spirometry and ECG findings.
7. Knowledge and method of examination of various skin lesions.
8. Applied anatomy of stomach, small intestine and large intestine. Detailed examination of gastrointestinal system.

PART B

50 marks

1. Definition of Karma. Trividha Karma for Shodhana.
2. Importance of Panchakarma in health and disease.
3. Indications and contraindications for Shodhana. Applied aspects of Koshta and Agni.
4. Importance of Purva and Pashchata Karma in Shodhana. Parihara Vishaya for Panchakarma.
5. Samsarjana Krama. General knowledge of various Aushadha and Ahara Kalpana used for Panchakarma.
6. Areas of research in Panchkarma.
7. Knowledge of equipments and instruments used in Panchkarma in ancient times and the possible modifications therein now.

Knowledge of quality standards of NABH (National Accreditation Board of Hospitals) for Ayurveda, guidelines for establishment and management of eco-friendly Panchkarma theatre including management of biomedical waste.

PRACTI CAL

100 marks

1. Duty in Panchakarma ward and theatre.
2. Performance of 5 Cases each of Snehana, Svedana, Vamana, Virechana, Basti and Nasya with maintaining of detailed record.
3. Record of detailed examination of 25 patients treated with Panchakarma and effects observed thereon.

**Distribution of marks
(practical):**

- | | |
|--|----------|
| 1. Case records of 25 patients in detail | 20 marks |
| 2. Performance of long Karma | 20 marks |
| 3. Performance of short Karma | 10 marks |
| 4. Panchakarmal procedures | 15 marks |
| 5. Instruments and spotting | 15 marks |
| 6. Viva voce | 20 marks |

REFERENCE BOOKS:

- | | | |
|----|---|---|
| 1 | Charak Samhita with commentary of Ayurved Dipika by Chakrapanidatta and Jalpakalpa tarul Gangadhara | |
| 2 | Sushruta Samhita with the Nibhandha Samgraha commentary of Dalhana and Nyayachandrik of Gayadasa on nidansthana | |
| 3 | Ashtang Hridaya with Sarvanga sundara and Ayurved rasayana commentaries | |
| 4 | Ashtanga Sangraha with Shashilekha commentery | |
| 5 | Bhela Samhita | |
| 6 | Kashyapa Samhita | |
| 7 | Bhavaprakasha of Bhavamishra | |
| 8 | Sharangadhara Samhita | |
| 9 | Vangasen | |
| 10 | Gadanigraha | |
| 11 | Ayurvediya Panchkarma chikitsa | Dr Mukundilal Dwivedi |
| 12 | Panchkarma Vigyan | Dr Haridas Shreedhar Kasture |
| 13 | Illustrated Panchkarma | Dr.G Srinivasa Acharya |
| 14 | Ayurveda-Principles and Practice of Panchakarma | Dr. Mandip and Dr Gurdip Singh |
| 15 | The Panchkarma Treatment of Ayurved with Kerala Specialities | Dr. T.L. Devaraj |
| 16 | Panchkarma Therapy | Dr. R.H. Singh |
| 17 | Principles and practice of vasti | Dr. Vasudevan Nampoothiri and Dr. L. M: |
| 18 | Claiton's Physiotherapy | |
| 19 | Teddy's Physiotherapy | |
| 20 | Harrison's Principles of Inernal Medicines | |
| 21 | Guyton's Physiology | |

M.S.-AYURVEDA PRELIMINARY
14. PRASUTI AVUM STRI ROGA
(Gynecology & obstetrics)

PAPER-II

Theory- 100 marks

PART A

50 marks

1. Concept of Tridosha, Dhatu, Upadhatu, Agni, Pancha Mahabhuta in relation to Prasuti and Stri Roga.
2. Concept of Artava and Shukra.
3. Concept of Rasa, Guna, Veerya, Vipak and Karma of Dravya used in Prasuti and Stri Roga.
4. Action and adverse drug reaction related to commonly used plants and Rasa Aushadhi in Prasuti and Stri Roga.
5. Concept of Pathya- Apathya in relation to Prasuti and Stri Roga.
6. Concept of Garbhadhan and Garbha.
7. Concept of Vrana and Vrana dushti.
8. Concept of special therapies of Ayurved used in Prasuti and Stri Roga.
9. Concept of Ashtavidha Shastra Karma, Yantra & shastra used in Prasuti and Stri Roga

PRACTI CAL

100 marks

1. Applied anatomy and physiology of genito-urinary system, abdomen, pelvis, pelvic floor, anterior abdominal wall, inguinal ligament, inguinal canal, vulva, rectum and anal canal.
2. Abnormal development, structure and function of female and male urogenital systems
3. Development, structure and function of placenta, umbilical cord and amniotic fluid.
4. Physiological and neuro-endocrinal changes during puberty, adolescence and menstruation.
5. Introduction of hormones related with gynaecology and obstetrics. Ovulation, fertilization, climacteric and menopause. Biophysical and biochemical changes in uterus and cervix during pregnancy and labour.
6. Pre-natal, Natal and Post natal counseling and examination.
7. Pharmacological study of drugs used in gynaecology and obstetrics.
8. Knowledge of diagnostic techniques used in gynaecology and obstetrics.
9. Basic Knowledge of pathological and biochemical investigation used in gynaecology and obstetrics.
10. Ethics, law and Acts Related to gynaecology and obstetrics – laws of abortion and adoption.
11. Knowledge of contraception and sterilization procedures.
12. Pre-operative and post operative care in gynaecology and obstetrics.

PRACTI CAL

100 marks

Contents:

1. Hospital duties in OPD, IPD, labor room, OT and casualty
2. History taking and counseling - 25 cases.
3. Labor cases - observation/performing - 10 cases

4. Knowledge of instruments required in gynaecology and obstetric practices.
5. Ayurvedic diagnostic and therapeutic procedures.
6. Fluid therapy and blood transfusion.
7. Contraception and sterilizations.

8. Pre-operative, operative and post operative procedures.

Distribution of marks (Practical)

1. Case records of Patients in Detail (25 Cases) - 20 Marks
2. Bedside clinical case taking
Long case - 20 Marks
Short case - 10 Marks
1. Procedures - 15 Marks
2. Identification of instruments, X-ray etc & Spotting - 15 Marks
3. Viva - voce - 20 Marks

REFERENCE BOOKS:

1. Related matter from all the samhitas and their commentaries.
2. Prasuti tantra evum stree roga by prof Tewari P V
3. Concepts of gynecology Dr Nirmala G Joshi.
4. Prasuti Tantra Prof. M. Dwivedi
5. Stree roga vigyan - Dr VNK Usha
6. Navya prasuti Vigyan Dr Pooja Bharadwaja
7. Text book of gynaecology-Berek and Novak.
8. Text book of obstetrics- Williams
9. Text book of obstetrics- D C Dutta
10. Text book of gynaecology - D C Dutta
11. Gabbe's normal and problem pregnancies.
12. Human embryology by Sandler.
13. Jeffcoat's principles of gynaecology
14. Te linde's gynaecological surgery.

M.D.-AYURVEDA PRELIMINARY
15. KAUMARBHRITYA - BALA ROGA
(Pediatrics)

PAPER-II

Theory- 100 marks

PART A

50 marks

1. Development of Kaumarbhritya tantra including ancient and modern literature. Strength of Ayurveda specific to child health care.
2. Vayobheda (Classification of age) according to different classics
3. Anatomical and physiological differences in child compared to adult.
4. Ayurvedic consideration of physiology and pathology of Dosha, Dhatu, Mala, Oja, Agni, Prakriti (sharirika-manasika), Kaya and Dhatuposhana in children.
5. Basic Concepts of growth and development, and its assessment.
6. Ayurvedic and modern clinical methods of examination of healthy and diseased newborn and children.
7. Knowledge of modern diagnostic tools like clinical and laboratory investigations, X-ray, USG, MRI etc.
8. Fundamentals of Ayurvedic treatment for childhood disorders.
9. Applied pharmacological considerations: Ayurvedic and modern concepts of drug doses, administration, distribution, metabolism, excretion, and other important factors of consideration.
10. National programs related to pediatrics.
11. Childhood Samskara
12. Principles of Child Psychology (Ayurvedic & modern concepts)

PART B

50 marks

13. Concept of Bala Rasayana and its application in physical and mental health of children.
14. Concept of Vyadhi-Kshamatva avam Vardhanopaya. Concept of immunity and immune enhancing measures including immunization.
15. Concept of Dhupana and Raksha karma and their clinical application in pediatric practice
16. Basic concepts of single drugs commonly used in pediatric practice with special reference to their karma like- Guduchi, Yastimadhu, Mandukaparni, Shankhapushpi, Ativisha, Pippali, Maricha, Shunti, Haritaki, Amalaki, Tulasi, Bhumyamalaki, Daruharidra, Haridra, Vidanga, Katuki, Dadima, Brahmi, Ashvagandha, Shatavari, Bala, Kampillaka, Trivrita, Jyotishmati, Vacha, Jeevanti, Rasna, Shatavari, Anantamula (Krishna Sariva), Durva, Khadir, Tankana, Tambula, Jatamansi, Sphatika.
17. Knowledge of their ingredients, indications, precautions and specific considerations including adverse drug reactions (ADR) of commonly used Ayurvedic formulations in pediatric practice e.g. Aravindasava, Baalachaturbhadra Churna, Kumarakalyana Rasa, Saraswatarista, Swarnaprashana (Kashyapa Samhita), Kumaryasava, Kushmanda Rasayana (Sharangdhar), Ashvagandha Rasayana (Ashtanga Hridaya), Brahmi Ghrita, Kalyanaka Ghrita, Talishadi Churna, Sitopaladi Churna, Haridra Khanda, Krimikuthara Rasa, Mugdha Rasa, Dantodbheda-Gadantaka Rasa, Rajanyadi Churna (Ashtanga Hridaya), Samvardhana Ghrita, Ashta Mangal Ghrita.

18. Methods of preparation of various specific Kalpana (e.g. Lehya, Syrup, drops etc.) according to needs of children.
19. Common instruments and their application in new born care and general pediatric practice.
20. Specific considerations in research methods related to Pediatrics.
21. Regulatory laws related to child health management.

PRACTICAL

100 marks

Contents:

1. a) In-patient case history record -(25 Patient)
- b) Child Health record - (50 Case)
1. Involvement in Outreach and National programs:
2. School Child health checkup
3. Adolescent education
4. Adolescent counseling etc
3. Pediatric ward/nursery management.

Distribution of marks (Practical)

1. a) Case History Record - (25 Patient) - 10 Marks
- b) Child Health record - (50 Case) - 10 Marks
2. Bed side clinical case taking
1. Long Case - 20 Marks
2. Short Case - 10 Marks
3. Procedures/ Kriya Kalpa - 15 Marks
4. Identification of instruments & Spotting - 15 Marks
5. Viva-voce - 20 Marks

REFERENCE BOOKS:

1. Kashyapa Samhita Complete Hindi translation by Satyapal Vidhyalankara English translation by Prof. Premvati Tiwari
2. Principles & practice of Pediatrics in Ayurveda: CHS Shastri
3. Child Health Care in Ayurveda: Abhimanyu Kumar
4. Ayurvedic Concepts of human Embryology: Abhimanyu Kumar
5. Kaumarbhritya by Prof. D.N. Mishra
6. Kaumarbhritya Ke Antargata Balgraho Ka Kramika Evam Vaigyanika Adhyana by Prof. Chanchal Sharma
7. Notes on Kaumarbhritya-by Dr. Dinesh K S
8. Pran - Pratyagamanam-by Dr. B.M. Singh
9. Ayurveda Dwara Matra Evam Shishu Paricharya by Dr. KS Patel, V.K. Kori & Rajgopal S.
10. Kaumarbhritya related references from Charaka Samhita, Sushruta Samhita Vagbhata etc.
11. Clinical Methods in Paediatrics by Meharban Singh
12. Pediatrics Emergencies by Meharban Singh
13. Essential Pediatrics O.P. Ghai
14. Text Book of Pediatrics Nelson
15. Care of New Born by Meharban Singh



CENTRAL COUNCIL OF INDIAN MEDICINE

POST GRADUATE PRELIMINARY 9. M.D. (AYU) SWASTHAVRITA (PREVENTIVE, SOCIAL MEDICINE & YOGA)

PAPER II

- * TEACHING HOURS FOR THEORY SHALL BE 100 HOURS.**
- ** TEACHING HOURS FOR PRACTICAL SHALL BE 100 HOURS.**

**THEORY- 100 MARKS
PRACTICAL AND VIVA-VOCE - 100 MARKS
(50 MARKS)**

PART A

1. Contribution of Swasthavritta in Community Medicine (Public Health).
2. Comparison of Concept of Swastha according to various Ayurvedic Samhitas.
3. Applied aspect of Swasthya, based on various parameters described in Samhitas.
4. Details of definition and dimensions of health and parameters for its evaluation as per World Health Organization.
5. Relevance of Dinacharya, Ratricharya and Ritucharya in health promotion and prevention of diseases in modern day scenario and different occupations. (Importance of Niyat Kala Vihara-Dincharya, Ratricharya and Ritucharya in prevention of diseases.)
6. Applied aspect of Adharaniya and Dharaniya Vega in health promotion and prevention of diseases with examples. (Importance of Aniyat Kala-Vegdharana, Vega Udirana, Shodhana, Brumhana, Bhutadyasparshana.)
7. Details of Ahara and Poshana as per Samhitas and its role in changing diet patterns of present era.
8. Nidra as per Ayurvedic classics. Effects of changing patterns of sleep on health.
9. Concept of Brahmacharya , Abrahmacharya and its relevance in present era.
10. Concept of Bala and Ojas in relation with Vyadhikshamatva .
11. Importance and relevance of Ritu Shodhana.
12. Role of Rasayana in promotion of health and prevention of diseases. Scope of Rasayana in Geriatrics and Reproductive & Child Health.
13. The concept of Ashtanga Yoga and its relation to health.
14. References about Yoga in Ayurvedic classics.
15. References about Ayurveda in Yoga classics.
16. The phenomenon of disease manifestation based on Adhi and Vyadhi as per Yoga Vashishtha and its relevance with Therapeutic Yoga.
17. Applied aspect of Pancha Mahabhutas in Nature Cure.

Part B

(50 MARKS)

1. Janapadoddhwamsa and measures of its prevention.
2. Principles of Epidemiology and its application.
3. Concept of disease control and stages of intervention.
4. Role of Swasthavritta and Yoga in prevention of communicable diseases.
5. Role of Swasthavritta and Yoga in prevention of non-communicable diseases.
6. Levels of disease prevention.
7. Kriya Kala and its importance in disease prevention.
8. Basic principles of Sankramaka Vikara - causes, modes of disease transmission, epidemiological triad.
9. Principles of Health Education and its role in community health maintenance and promotion.
10. Environmental health - concept of water, soil and air purification as per Ayurveda and Modern Science.
11. Newer threats to Environment – including plastic, e-waste, radiation and global warming.
12. Importance and relevance of Meteorology in Swasthavritta.
13. Role of Swasthavritta in Maternal and Child Health care.
14. Role of Swasthavritta and Yoga in Sports' Medicine.

15. National Population Policy, Importance of Family Planning Methods in National development. Ayurvedic methods of birth control (Yoga Ratnakara).
16. National Health Policy as per Alma Ata declaration.

PRACTICAL

1. Departmental duties
 - a. Duty in OPD and IPD with regard to Ayurveda Dinacharya, Ritucharya, Pathyapathya, Yoga and Nisargopachara.
 - b. Museum development- wall magazine / charts
 - c. Regular attendance in Yoga training in the Swasthya Rakshana and Yoga OPD.
2. Practice the following daily regimens
 - a. Pratimarsha Nasya
 - b. Anjana
 - c. Kavala and Gandusha
 - d. Abhyanga
 - e. Udvartana
 - f. Prayogika Dhoomapana
 - g. Matra Basti
3. Preparation of different Krittanna Kalpanas
 - a. Laja Manda
 - b. Mudga, Kulatha, Chanaka Yusha
 - c. Shali and Nartaki Peya
 - d. Shali, Dashamoola Yavagu
 - e. Shali Vilepi
 - f. Krishara
 - g. Nimbu Panaka
 - h. Payasa
 - i. Godhuma/Yava/Nartaki Roti
4. Health Awareness lectures to the community (mimimum 5)
5. Assessment of Swasthya (Mimimum 5 cases)
6. Participation in observance of National & International days related to health.
7. Practice of the following Asanas:
Yogic Shukshma and Sthula Vyayama.
Standing Postures- Ardhakatichakrasana, Padahastasana, Ardchhakrasana, Trikonasana
Sitting Postures- Swastikasana, Siddhasana, Padmasana, Vajrasana, Bhadrasana, Gomukhasana, Shashankasana / Shashakasana, Ushtrasana, Paschimottanasana, Suptavajrasana, Ardhamatsyendrasana
Supine Postures- Shavasana, Pavanmuktasana, Sarvangasana, Matsyasana, Halsana, Chakrasana,
Prone Postures- Makarasana, Shalabhasana, Bhujangasana, Dhanurasana.
8. Practice of Pranayama.
9. Uccharit Pranava Pranayama (Om Chanting with Pranayama).

Distribution of marks (Practical)

1. Records - 10 Marks
2. Preparation of Kritanna Kalpanas - 20 Marks
3. Dinacharya procedure - 10 Marks
4. Spotting (10) Aahar dravyas, Family Planning Devices, Vaccine/Serum and Models /Specimens, Naturopathic and yogic Specimens. - 20 Marks
5. Yogasana and Pranayam - 10 Marks
6. Viva-voce - 30 Marks

Reference Books:

- 1) Relevant portions of Charak, Sushruta, Vagbhata (Ashtang Hrudaya), Ashtang Samgraha, Sarangadhara, Bhavaprakasha, Madhavanidana &Yogaratnakara, Bhela Samhita with the respective commentaries
- 2) SwasthavrittaSamuchaya -VaidyaPtRajesvarDuttaShastri
- 3) SwasthyaVignyana -Dr.B.G.Ghanekarshastri
- 4) SwasthvrittaVigyan - Dr.Ramharsha Singh.
- 5) Swasthvrittam - Dr.BramhanandTripathi
- 6) AyurvediyaSwasthvrittam - Vd.Jalukar
- 7) SwasthaVigyan - Dr.MukundswaroopVerma
- 8) Swasthavritta - Dr.Shivkumar Gaud
- 9) Swasthavritta- Part-I & II- Vd. Mhaiskar, Vd.Vatve
- 10) Ayurvediya Hitopdesh - Vd.RanjitRai Desai
- 11) Preventive and Social Medicine - J.K.Park
- 12) Preventive and Social Medicine – Mahajan
- 13) Preventive and Social Medicine – B.N.Ghosh
- 14) Community Medicine - Baride and Kulkarni
- 15) Preventive and Social Medicine – Gupta
- 16) Patanjali Yoga Sutra – Maharshi Patanjali, Karambelkar
- 17) HathayogPradipika – SwatmaramYogendra
- 18) GherandSamhita- Gherand Muni
- 19) Shiva samhita - Kaivalyadhama
- 20) Yoga and Ayurveda - Dr.Rajkumar Jain
- 21) YogikYogPadhati - BharatiyaprakrutikChikitsaPadhat
- 22) YogikChikitsa - ShriKedarnath Gupta
- 23) SachitraYogasanDarshika - Dr.IndramohanJha
- 24) Yoga and Yogikchikitsa - Ramharsha Singh
- 25) The Foundation of Contempary Yoga - R.H.Singh
- 26) Yogadeepika - Shri. B.K.S. Iyengar
- 27) YogasidhantaevumSadhna - H.S.Datar
- 28) PrakritikaChikitsa -Kedarnath Gupta
- 29) PrakrutikChikitsaVigyan - Verma
- 30) PrakrutikChikitsaVidhi - Sharan Prasad
- 31) Light on Yoga, Light on Pranayama- Shri. B.K.S. Iyengar
- 32) Light on Patanjala yogasutra - Shri. B.K.S. Iyengar
- 33) Janasankhyashikshasidhanta evamUpadeysa - S.C.Seel
- 34) Health and Familywelfare - T.L.Devraj
- 35) Bio-Statistics - B.K. Mahajan
- 36) Swasthavritta - Vd.Sakad
- 37) Reddy's Comprehensive Guide to Swasthavritta –Dr.P.Sudhakar Reddy
- 38) Swasthavritta – Vd Yeshwant Patil and Vd. Vhawal
- 39) Swasthavritta – Vd. Patrikar Vijay
- 40) Dr.Me Kay Khau? _Dr.M.S.Kulkarni
- 40) Swasthavrittavidnyan - Dr.MangalaGowri

- 41) Positive Health - Dr.L.P.Gupta
- 42) Biogenic Secretes of Food In Ayurveda - Dr.L.P.Gupta
- 43) Text book of Swasthavritta - Dr.Ranade, Dr.Bobade, Dr.Deshpande
- 44) Food and nutrition – Swaminathan
- 45) Yoga and Nisargopachar- Vd. Prama Joshi
- 46) Essence of Yoga - Dr.MangalaGowri
- 47) The essentials of Nature Cure - Dr.MangalaGowri
- 48) Yogasudha – Dr. Kashinath

Reviewed by

1. Dr. Kamalesh Sharma (Chair person)
2. Dr.Arpan Bhatt
3. Dr. Medha Kulkarni



CENTRAL COUNCIL OF INDIAN MEDICINE

**POST GRADUATE PRELIMINARY
14. MS (AYU) SHALAKYA TANTRA
(DISEASE OF EYE, EAR, NOSE, THROAT, HEAD, ORO- DENTISTRY)**

PRACTICAL AND VIVA VOCE – 100 MARKS

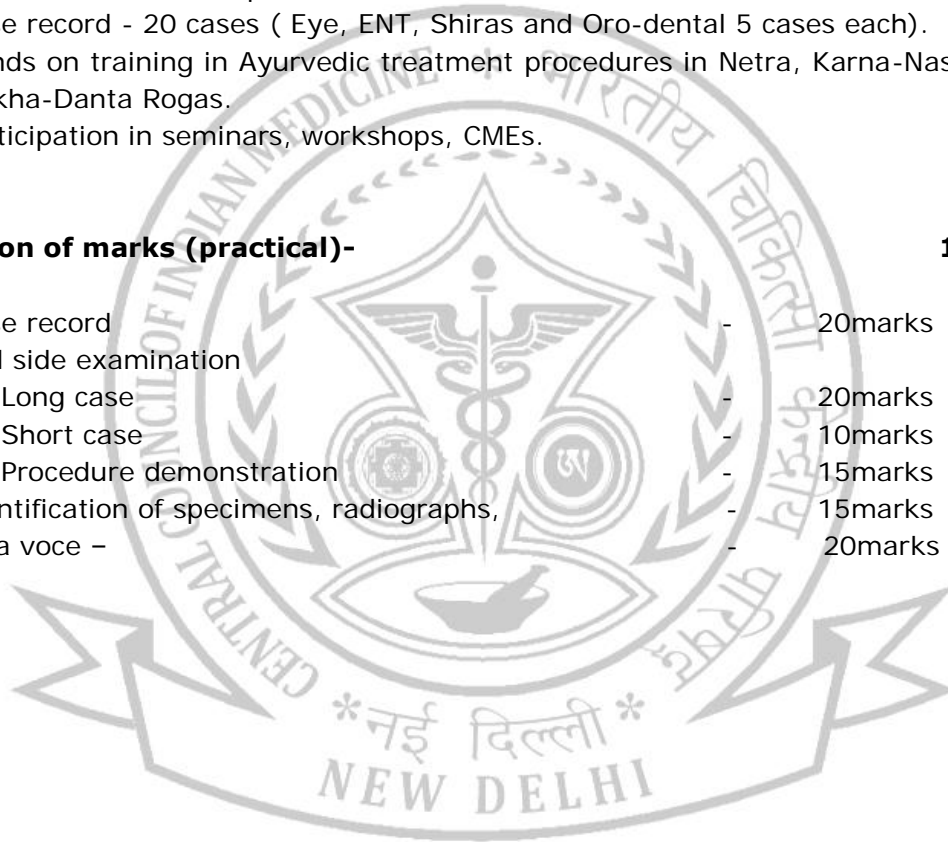
Pattern of practical/clinical training-

1. Clinical postings in OPD, IPD, Kriyakalpa and OT.
2. Clinical bed side case presentation
3. Case record - 20 cases (Eye, ENT, Shiras and Oro-dental 5 cases each).
4. Hands on training in Ayurvedic treatment procedures in Netra, Karna-Nasa – Shira – Mukha-Danta Rogas.
5. Participation in seminars, workshops, CMEs.

Distribution of marks (practical)-

100 marks

- | | | |
|--|---|---------|
| 1. Case record | - | 20marks |
| 2. Bed side examination | | |
| a. Long case | - | 20marks |
| b. Short case | - | 10marks |
| c. Procedure demonstration | - | 15marks |
| 3. Identification of specimens, radiographs, | - | 15marks |
| 4. Viva voce – | - | 20marks |



**AYURVED DHANWANTARI – SHALAKYA TANTRA
MS (AYU) SHALAKYA
(DISEASES OF EYE, EAR, NOSE, THROAT, HEAD, ORO-DENTISTRY)**

FINAL EXAM

METHODS OF TRAINING

- Intensive integrative training would be imparted to scholars in understanding the classical Ayurvedic aspects with an emphasis of critical comparative interpretation.
- Mandatory participation of scholars in seminars, group discussions, clinical demonstrations, journal review meetings, case study, continuing education activities and research clinical projects.
- During the first year course the emphasis would be laid to impart adequate knowledge on fundamental aspects and their applications, with a focus on latest diagnostic tools, instrumentations and laboratory procedures. Practical orientation and hospital based clinical training is an integral part of the curriculum all through and also to be involved in the dissertation work.
- In the second year, training would stress upon extending the knowledge on techniques and imparting skill for surgical performance, so that the scholar is able to perform Eye, Ear, Nose, Throat and Dental surgical procedures independently.
- In the third year the scholar should concentrate on the clinical work and research work based on the dissertation.
- The participation of the scholars in all the aspects of educational process is mandatory.
- Hospital postings- The student has to work for 6 terms (one term of 6 months each) of resident posting is compulsory you to which first 2 postings will be as a JR 1, the next two postings will be as a JR 2 and final two postings as JR 3.
- The student should also develop in the academic work of the department.

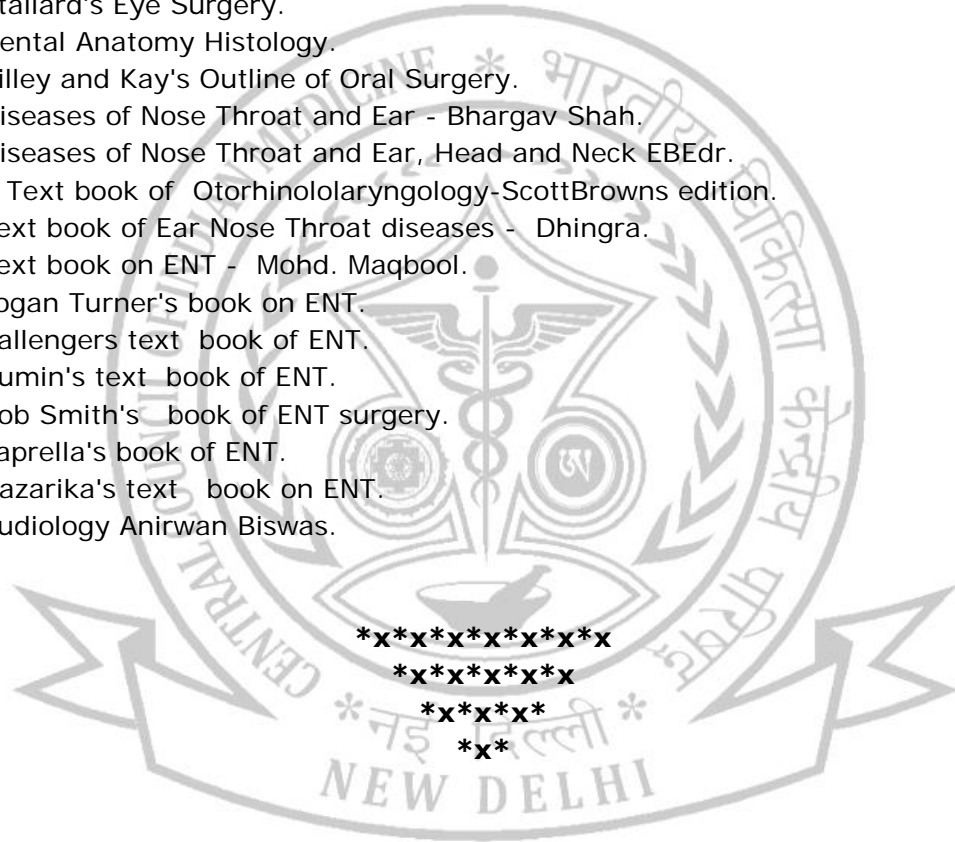
Pattern of Practical Examination:

- | | |
|---|-----------|
| 1. Bed side examination | |
| Short case 2 of 10 marks each | -20 Marks |
| Long case | -20 Marks |
| 2. Identification of specimen/Instrument/Radiograph | -10 Marks |
| 3. Thesis Presentation / Viva | -10 Marks |
| 4. Teaching Skills | -10Marks |
| 5. Viva Voce | -30 Marks |

Reference Books

1. Charaka Samhita with commentaries.
2. Sushrut Samhita and vaghbhata with commentaries.
3. Astangahridaya and Astangasangraha with commentaries.
4. Madhavanidan with commentaries.
5. Bhavaprakashawith commentaries.
6. Sarangadhara Samhita with commentaries.
7. Sahstrayoga Sangraha.
8. Nimi Tantra.
9. Relevent part of Chakradhatta, Bhel Samhita, Harita Samhita.
10. Shalakyta Tantra – Ramanath Dwivedi - R.C. Chaudhary.

11. The Actions and uses of Indigenous Ophthalmic Drugs N. Srikanth.
12. Clinical Examination of Ophthalmic Cases - Agarwal and Gupta.
13. Alder's Physiology of the Eye and Clinical Applications Cotlier, St. Louis.
14. Disease of the Lens and Vitreous, Glaucoma and Hypotony Duke Elder, St. Louis.
15. Manual of the Diseases of the Eye – Bailliere Tindal and Castell. Ahmed E, Dhanda, Dutta, L.C Jaypee brothers, May C and Worth C.
16. Ocular Differential diagnosis.
17. Clinical Ophthalmology – Roy Fedrick Hampton, Lea and Febiger Smith, R Varghese.
18. Manual of Refraction - Duke and Elder.
19. Hand Book of ophthalmology - B.M. Chaterjee.
20. Clinical Ophthalmology - Kanski.
21. Parsons Diseases of Eye.
22. Stallard's Eye Surgery.
23. Dental Anatomy Histology.
24. Killey and Kay's Outline of Oral Surgery.
25. Diseases of Nose Throat and Ear - Bhargav Shah.
26. Diseases of Nose Throat and Ear, Head and Neck EBEdr.
27. A Text book of Otorhinololaryngology-Scott Browns edition.
28. Text book of Ear Nose Throat diseases - Dhingra.
29. Text book on ENT - Mohd. Maqbool.
30. Logan Turner's book on ENT.
31. Ballengers text book of ENT.
32. Kumin's text book of ENT.
33. Rob Smith's book of ENT surgery.
34. Paprella's book of ENT.
35. Hazarika's text book on ENT.
36. Audiology Anirwan Biswas.



CENTRAL COUNCIL OF INDIAN MEDICINE

POST GRADUATE PRELIMINARY 13. M.S. (AYU) SHALYA TANTRA – GENERAL SURGERY

FUNDAMENTAL PRINCIPLES AND APPLIED ASPECTS OF SHALYA TANTRA

PAPER-II

**THEORY- 100 MARKS
TEACHING HOURS – 100 HRS**

PART A

50 MARKS

1. Etymology, Definition, Scope and Importance of Shalya Tantra.
2. Study of Sushruta Samhita Sutra Sthana from 1st to 29th chapter.
3. Study of modern surgical clinical methodology.
4. Applied anatomy, physiology and surgical pathology of common surgical conditions including relevant Ayurvedic aspects.
5. Applied aspect of Shat Kriyakala in the pathogenesis of surgical diseases.
6. Applied aspect of Prakriti in understanding the causes and role of treatment in surgical diseases.
7. Applied aspect of basic principles of Ayurveda in Rogi Pariksha (Trividha, Shadvidha, Ashtavidha and Dashavidha Pariksha).
8. Concept and applied aspect of Sadhya-Asadhya (Prognosis) - Arishtha lakshana.
9. Marma Sharira – Etymological derivation, definition, basic concept of Marma, origin, classification, Pramana. Consequences of Marmaghata and their management.
10. Concept of Shock - Its varieties, etiopathogenesis and management – Cardio-pulmonary resuscitation (CPR), Endo-tracheal intubation and Tracheostomy. Drug reactions and Anaphylaxis – Management.
11. Basics of Fluid, Electrolyte, Acid Base Balance and Nutrition
12. Antibiotics, Analgesics, Anti-inflammatory and Emergency drugs in surgical practice.
13. Surgical Emergency conditions and its management.
14. Sushruta's concept of Rakta. Raktasrava – Haemorrhage – Types, Patho-physiology, clinical features and management. Concept of Raktastambhana – Haemostasis. Bloodtransfusion – Indications, blood groups, components, compatibility and complications with management.
15. Medico-legal aspects in Surgery. Knowledge of documentation and record keeping.

PART B

50 marks

16. Knowledge of ancient and recent Yantra and Shastra – Surgical instruments and their application in surgical practice.
17. Asepsis and Antisepsis. Sterilisation (Nirjivanukaran) - methods and types.
18. Surgical infections – Sepsis, Cellulitis, Erysipelas, Tetanus, Gas gangrene. Handling and care of HIV and Hepatitis positive patients. Knowledge of conditions like Bacteraemia, Septicaemia, Toxaemia and Pyaemia
19. Sangyahan / Anesthesiology - Types, methods, indications, contraindications, complications and its management.
20. Trividha Karma – Purva, Pradhan and Pashchat Karma. Modern principles of pre-operative and post-operative care.

21. Ashtavidha Shastra Karmas.
22. Bandhana Karma – Recent advances.
23. Kshara Karma – Introduction, types, method of various preparations like Kshara, Kshara Varti, Kshara Pichu and applications.
24. Kshara Sutra – Method of preparation, standardization and applications.
25. Agnikarma – Introduction, types and applications.
26. Raktamokshana – Introduction, types and applications.
27. Application of Panchakarma therapy in surgical practice.
28. Scope of Pathya-Apathya in the management of surgical diseases.

PRACTICAL

100 MARKS

Content:

1. Hospital duties in OPD, IPD, OT and Casualty.
2. Case record – 50 cases.
3. Surgical cases – Observing/Assisting/Performing- 50 cases.
4. Knowledge of instruments required in surgical practices.
5. Ayurvedic and Modern diagnostic and therapeutic procedures.
6. Fluid therapy and blood transfusion.
7. Contraception and sterilizations.
8. Pre-operative, operative and post operative procedures.
9. Practical training of local Anaesthesia.
10. Interpretation of Imaging techniques.
11. Practical knowledge of Yogya vidhi – Experimental surgery and Simulators.

Distribution of marks (practical):

1. Presentation of related Research work like Synopsis and Case record - 20 marks
2. Bedside clinical case taking-

Long case	- 20 marks
Short case	- 10 marks
3. Identification of instruments, X-ray etc - 10 marks
4. Demonstration of Surgical and Parasurgical Procedure - 10 marks
5. Viva voce - 30 marks

REFERENCE BOOKS:

1. Sushruta Samhita
2. Ashtanga Sangraha
3. Ashtanga Hridaya
4. Charaka Samhita
5. The Surgical instruments of the Hindus - Girindranath Mukhopadhyaya
6. Shalya Tantra Samuchchaya - Pandit Ramadesh Sharma
7. Shalya Vigyan (Part 1-2) - Dr. Surendra Kumar Sharma
8. Shalya Samanvaya (Part 1-2) - Vd. Anantaram Sharma
9. Shalya Pradeepika - Dr. Mukund Swaroop Verma
10. Sushruti - Dr. Ram Nath Dwivedi
11. Clinical Shalya Vigyan - Dr. Akhilanand Sharma
12. Bhagna Chikitsa - Dr. Prabhakar Janardhan Deshpande
13. Kshara sutra management in anorectal ailments - Dr. S.K. Sharma, Dr. K.R.Sharma and Dr. Kulwant Singh.
14. A manual on Fistula-in-ano and Ksharasutra Therapy – Dr. Manoranjan Sahu
15. Recent trends in the management of Arshas / Haemorrhoids - Dr. P. Hemantha Kumar
16. Anorectal diseases in Ayurveda - Dr. Sizoria and Dr. Praveen

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| 17. Adhunka Shalya Chikitsa Siddanta | Kumar Chowdary. |
| 18. Agnikarma Technology Innovation | - Dr. Katil Narshingham Udupa |
| 19. Shalya Tantra Ke Siddhant | - Dr. P.D. Gupta |
| 20. Arsha Evum Bhagander Mein sutra Avacharan | - Dr. K.K.Takral |
| 21. Recent advances in Kshara Sutra | - Vd. Kanak Prasad Vyas |
| 22. Leech application in Ayurveda | - Dr. M. Bhaskar Rao |
| 23. Kshara Sutra | - Dr. M. Bhaskar Rao |
| 24. Text book of Shalya Tantra (Ayurvedic Surgery) | - Dr. S.N.Pathak |
| 25. Shalya Shalakyta Tantra | - Dr. P. Hemantha Kumar |
| 26. Surgical ethics of Ayurveda | - Vd. S.G. Joshi |
| 27. Anushastra Karma | - Dr. D.N. Pande |
| 28. Concept of Vrana is Ayurveda | - Dr. D.N. Pande |
| 29. Significance for Poorva Karma in Surgical Patient | - Dr. Lakshman Singh |
| 30. Sangyahan Prakash | - Dr. Lakshman Singh |
| 31. Marma Science and Principles of Marma Therapy | - Dr. D.N. Pande |
| 32. Recent trends in the management of Bhagandara / Fistula-in-ano | - Dr. Sunil Kumar Joshi |
| 33. Principles and Practice of Agnikarma | - Dr. P. Hemantha Kumar |
| 34. Shalya Vigyan (Sachitra) | - Dr. Anand Kumar and |
| 35. Text book of Surgery | Dr. Kanchan Shekokar. |
| 36. Operative Surgery | - Anantram Sharma |
| 37. Bailey and Love's Short Practice of Surgery | - Sabistan |
| 38. Text books of Operative Surgery | - Rob and smith |
| 39. Principles of Surgery | - Norman.S. Williams, Charles.V. |
| 40. Emergency Surgery | Mann and R.C.G. Russell |
| 41. Manipal Manual of Surgery | - Farquharson's |
| 42. SRB's Manual of Surgery | - Schwartz |
| 43. Surgery of the Anus, Rectum and Colon | - Hamilton Bailey's |
| 44. Surgical pathology | - Dr. Rajgopal Shenoy |
| 45. Clinical methods in surgery | - Sriram Bhat M |
| 46. Textbook of Operative Surgery | - John Goligher |
| 47. A concise Text Book of Surgery | - Willing Worth |
| 48. A manual on Clinical Surgery | - S. Das |
| 49. A System of Surgical Diagnosis | - S. Das |
| 50. Clinical Anatomy/ Surgical Anatomy | - S. Das |
| 51. A Practical Guide to Operative Surgery | - S. Das |
| 52. Manual of Surgical Instruments | - T.N. Patel |
| 53. Ward Procedures | - John E.Skandalakis |
| 54. Drugs and Equipment for Anaesthesia | - S. Das |
| 55. Primary Anaesthesia | - M.M. Kapur |
| 56. Synopsis of Anaesthesia | - Patel Mansukh. B |
| 57. Outline of Orthopedics | - Arun kumar |
| 58. Fractures and Joint Injuries | - Maurice King |
| 59. Outline of Fracture | - Lee |
| | - John Crawford Adams and |
| | David Hamblen. L |
| | - Watson-Jones |
| | - John Crawford Adams |

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CENTRAL COUNCIL OF INDIAN MEDICINE

POST GRADUATE FINAL YEAR 13. MS (AYU) SHALYA TANTRA – GENERAL SURGERY

PAPER – I Shalya Tantra Vangmaya – Literature, Research and Development

**100 Marks
100 Hours**

1. Thorough study of the Sushruta Samhita including other relevant portions of Brihatrayee and Laghutrayee.
2. Knowledge and importance of Surgical Audit and Research.
3. Medico legal issues – Understanding the implications of acts of omission and commission in practice. Issues regarding Consumer Protection Act, medical profession, national health policy - Implications in a medico-legal case like accidents, assaults etc.
4. Surgical ethics including Informed consent.
5. Yogya Vidhi – Practical and Experimental training on different types of Surgical Models for Research in Surgery.
6. Clinical and diagnostic methods in Shalya Tantra - X-rays, U.S.G., Endoscopies (for diagnostic and treatment purposes), MRI, CAT scanning and other recent diagnostic tools.
7. Concept of Sandhana Karma – Plastic reconstructive and cosmetic surgery. Fundamentals of Sandhana Karma –
 - i. Karna Sandhana – Auroplasty
 - ii. Nasa Sandhana – Rhinoplasty
 - iii. Ostasandhana – Cheiloplasty
 - iv. Grafts and Flaps – Techniques and applications.
 - v. Vascular anastomosis and grafts.
8. Recent development on Sushruta's surgical principles and practices.

PAPER – II - SHALYA TANTRA VIGYAN

**100 Marks
100 Hours**

1. Vrana – Wound management
 - i. Management of Nija Vrana, Dushta Vrana and Nadi Vrana.
 - ii. Vrana Chikitsa – Shasti upakramas, Pathya-apathya.
 - iii. Wound and Ulcer.
 - iv. Dagdha Vrana – Burns, scalds, Dhumopaghata, Ushnavata, Frost bite, electric burns and their management.
 - v. Prameha Pidaka – Diabetic carbuncle, Diabetic wound and its management.
 - vi. Kotha – Gangrene and Principles of Amputation.
 - vii. Sadyo Vrana - Traumatic wounds – Nidana, Prakara, Lakshana, Upadrava and Chikitsa, Bites and stings and its management.
2. Pranasta Shalya – Diagnosis and management.
3. Vranashopha-Inflammation, Vidradhi – Abscesses and Pidika – Boils.
4. Granthi – Cyst and Arbuda – Benign and malignant Neoplasm.
5. Bhagna - Classification, Clinical features, Complications and Management.
6. Sandimoksha – Classification, Clinical features, Complications and Management.
7. Udara Roga - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management.

8. Gulma Roga - Nidana, Prakara, Lakshana, Upadrava and Chikitsa.
9. Shoola vyadhi - Nidana, Prakara, Lakshana, Upadrava and Chikitsa.
10. Diseases of Rectum and Anal Canal – Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Arshas, Parikartika, Bhagandara, Guda Vidradi, Gudabhramsa and Sanniruddaguda.
11. Ashmari - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management.
12. Mutraghata and Mutrakrichhra - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management.
13. Niruddhaprakasha - Phimosi, Parivartika – Paraphimosi and Avapatika - Prepuceal ulcer.
14. Vriddhi Roga - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management.

PAPER – III - ADHUNIK SHALYA KARMA - MODERN SURGERY

100 Marks
100 Hours

1. Fundamentals of modern surgery and treatment of surgical disorders including surgical anatomy, physiology and pathology.
2. Diagnosis and Surgical treatment of head and spine injury, thoracic trauma and abdominal trauma. Blast injuries and Management.
3. Diagnosis and surgical measures for disorders of Artery, Vein, Ligaments, Muscles and Tendons.
4. Diagnosis and Surgical management of neck disorders e.g. salivary glands, thyroid, Thyroglossal cyst and Fistula, Branchial cyst and fistula, Cystic hygroma and Lymphadenopathies.
5. Diagnosis and Surgical management of breast diseases, Benign and Malignant breast tumours.
6. Diagnosis and Surgical measures of diseases of Gastrointestinal system -
 - i. Oral cavity - Oral ulcers, Oral cancer, Precancerous conditions, Submucosal fibrosis, Leukoplakia, Cleft lip and palate, Lip tumours, Mucosal cyst, Nasopharyngeal cancer, Tongue ulcer and cancer.
 - ii. Oesophagus - Oesophageal varices, Dysphagia, Neoplasm, Strictures and Gastro oesophageal reflux.
 - iii. Stomach and duodenum - Congenital anomalies, Injuries, Inflammation, Ulcer, Neoplasm, Pyloric stenosis, Acute dilatation, Hiatus hernia and Foreign bodies.
 - iv. Pancreas - Congenital anomalies, Acute and Chronic pancreatitis, Calculi Neoplasm and Cysts of pancreas.
 - v. Peritoneum, Omentum, Mesentery, Retroperitoneal Space - Peritonitis, Abscess, Neoplasm, Mesenteric cyst, Torsion of mesentery, Vascular thrombosis, Retroperitoneal cyst and Fibrosis.
 - vi. Abdominal mass - Diagnosis and Management.
 - vii. Small intestine - Congenital anomalies, Inflammation, Ulcer, Neoplasm, Stenosis, Injuries, Foreign bodies, Diverticuli, Peutz-jeghers syndrome, Chron's disease, Carcinoid tumours, Enteric perforation and Intestinal fistula.
 - viii. Large intestine - Congenital anomalies, Inflammation, Ulcer, Neoplasm, Stenosis, Injuries, Foreign bodies, Diverticuli, Faecal fistula, Amoebiasis and Familial polyposis coli.
 - ix. Caecum and Vermiform appendix- Appendicitis, Appendicular abscess, Appendicular mass, Perforation, Carcinoid Tumor and other Neoplasm.
 - x. Gastrointestinal bleeding - Haemetemesis, Malaena, Haemobilia, Bleeding per anum - Causes, Diagnosis and Management.

- xi. Rectum and anal canal - Diagnosis and Surgical management of Congenital Anomalies, Inflammation, Ulcer, Neoplasm, Stenosis, Prolapse, Haemorrhoids, Fistula-in-ano, Fissure-in-ano, Anorectal Abscess, Incontinence, Injuries, Foreign bodies and Pilonidal sinus.
7. Umbilicus and abdominal wall – Congenital anomalies, Umbilical infections, Sinus, Neoplasm and Desmoid tumor.
8. Diagnosis and surgical measures of diseases of Hepatobiliary system -
 - i. Liver – Abscess, Cyst - Hydatid cyst, Primary and Secondary malignant tumours, Portal Hypertension and Budd-Chiari Syndrome.
 - ii. Gall bladder and Bile duct - Congenital anomalies, Acute and Chronic Cholecystitis, Cholelithiasis, Neoplasm, Cholangitis, Stenosis, Choledocholithiasis, Choledochal cyst and Cholangiocarcinoma.
 - iii. Spleen – Splenomegaly and Splenic Injury.
9. Diagnosis and surgical management of Hernias – Inguinal, Femoral, Umbilical, Incisional, Abdominal wall and other hernias.
10. Endoscopic procedures - Oesophagogastroduodenoscopy, Sigmoidoscopy and Colonoscopy.
11. Principles of laproscopic surgery - Diagnostic and therapeutic laparoscopy.

PAPER – IV

VISHISHTA SHALYA VIGYAN – SPECIALITY

The Scholar has to choose the any one of the Specialities amongst the following based on research area

PAPER – IV - Speciality No - 01 Anushastra Vigyan – Parasurgical Therapeutics

100 Marks
100 Hours

1. Kshara Karma and Prayoga – Caustic therapy

- i. Introduction of different types of Kshara, Method of preparation, Standardization, pH value, Application, Complications and its management.
- ii. Surgical Anatomy and Physiology of Anus and Rectum.
- iii. Arshas - Nidana, Purvaroop, Roopa, Samprapti, Prakara and Chikitsa.
- iv. Haemorrhoids - Aetio-pathogenesis, types and its surgical management. Knowledge of different methods of treating Haemorrhoids - Rubber band ligation, D.G.H.A.L, Radiofrequency, Ablation, Cryo-surgery, Cautery, Laser, Infrared coagulation and other advanced techniques.
- v. Bhagandara - Nidana, Purvaroop, Roopa, Samprapti, Prakara, Chikitsa and application of Kshara Sutra.
- vi. Fistula-in-ano - Definition, Aetio-Pathogenesis, Types, Diagnostic methods and its Surgical and parasurgical management including knowledge of Fibrin Glue, Advanced Flap Therapies and other recent techniques.
- vii. Parikartika - Nidana, Samprapti and its Chikitsa.
- viii. Fissure-in-ano - Aetio-pathogenesis, types and its management.
- ix. Sannirudhaguda and its Chikitsa.
- x. Anal Stenosis - Aetio-pathogenesis and its management.
- xi. Gudavidradhi - Nidana, Purvaroop, Roopa, Samprapti, Prakara and its Chikitsa.
- xii. Anorectal abscesses – Aetio- pathogenesis, types, complications and its management.
- xiii. Foreign body in rectum and anal canal - Method of diagnosis and its management.
- xiv. Congenital Anorectal disorders and its management.
- xv. Anorectal tumour - Types and its management.

2. Agnikarma – Thermo therapy

- i. Introduction, definition and importance of Agnikarma.
- ii. Agnikarma - Poorva, Pradhana and Paschat karma, various substances and Shalakas used for Agnikarma and their indications, contra-indications and complications.
- iii. Knowledge of modern thermal equipment - Diathermy, Laser therapy, Microwave, Ultracission technique, Cryo Technique and its uses.
- iv. Effect of Agnikarma on skin, muscle tissue, nerves, metabolism, blood circulation and infective lesions.

3. Raktamokshana – Bloodletting Procedures

- i. Indications, contraindications and importance of Raktamokshana.
- ii. Justification of usage of different types of Raktamokshana in various therapeutic applications.
- iii. Different types of Raktamokshana – Sastrakritha - Siravyadhana, Prachana and Asastrakritha - Shringa, Jaluka, Alabu and Ghati.
- iv. Jalauka - Nirukti, Paryaya, Bhedha, Sangrahana, Samrakshana, Jalaukavacharana Vidhi - Poorva, Pradhana and Paschat karma.
- v. Knowledge of Leeches - Morphology, Anatomy, Physiology, Bio-chemical effects of its various constituents present in its saliva.

PAPER – IV - SPECIALITY NO-02 ASTHI SANDHI EVAM MARMA VIGYAN – ORTHOPAEDICS

100 marks
100 Hours

1. Asthi Sharira - Etymology, Embryology, Applied Anatomy and Physiology of Asthi. Its Panchbhautik constitution, Poshan (Nutrition), Asthivaha Srotas, Upadhatu and Mala. Total Number and classification of Asthi. Concept of Dhatwagni in Ayurveda. Asthi Dhatu Kshaya and Vriddhi lakshana. Knowledge about Tarunasthi. Embryology, Ossification, Histology, Metabolism, Blood Supply, Types and Biomechanics of Bone and cartilage.
2. Healing mechanism of bone and factors influencing the bone healing according to Ayurvedic and Modern concept. Biological and Biophysical technologies for the Enhancement of Fracture Repair. Knowledge of Sandhaniya and Ropaniya drugs.
3. Sandhi Sharira – Classification, Applied Anatomy and Physiology of Asthi Sandhi. Classification, Applied Anatomy and Physiology of Joints and Healing Mechanism of a joint.
4. Knowledge of Splints, Orthotics & Prosthetics.
5. Knowledge of Orthopedic implants (*e.g. wires, screws, plates, nails*) and Instruments. Knowledge of equipments (*e.g. C-arm image intensifier and drill machines etc*).
6. Concept of Pain according to Ayurved and Modern Medical science.
7. Principles of Reconstruction, Transplantation, Bone grafting, Bone Banking, Bone transportation and Amputation.
8. Vata Vikara – Asthi, Sandhi and Marma related Vata Vikara like Gridhrasi, Bisvachi, Avabahuka, Manyastambha, Khalvi, Dhatugata vata, Snayugata vata, Katishoola, Katigraha.
9. Diseases pertaining to Muscles, Tendons, Ligaments, Fascia and Bursae.
10. Diseases and Congenital anomalies of Spine e.g. Ankylosing spondylitis, Infective conditions, Tuberculosis, Spondylolisthesis, Inter-vertebral Disc Prolapse,

Spondylosis, Scoliosis, Kyphosis, spina bifida, Hemivertebra, Block vertebra, Sacralisation and Lumbrisation.

11. Diseases and Congenital anomalies of Cervical Spine
12. Diseases and Congenital anomalies Sacroiliac Joint and Bony Pelvis.
13. Diseases and Congenital anomalies of Hand.
14. Diseases and Congenital anomalies of Foot.
15. Diseases and Congenital anomalies of Limbs.
16. Orthopedic Neurological Disorders. Post Polio Paralysis & Cerebral Palsy.
17. Snehana, Swedana and Panchakarma in Marma, Asthi and Sandhi Vyadhi.
18. Yogic Practices in Orthopedics.
19. Principles of Arthroplasty- Joint Replacement.
20. Introduction of Peripheral Vascular Diseases.
21. Bhagna - Etiology, classification and General Management principles and Prognosis.
22. Modern concept of Bone and Joint injuries - Etiology, Epidemiology, Classification and General management principles.

23. Individual Bone and Joint injuries - Etiology, Epidemiology, Classification and management principles.
24. External immobilization techniques - Classical and traditional Kusha -splints, Plaster of Paris Technique, Knowledge of different splints and Plasters.
25. Pathological Fractures including Fragility fractures, Stress Fractures and Peri-prosthetic Fractures.
26. Fractures in Children - Etiology, Epidemiology, Diagnosis, management and complications.
27. Prognosis of skeletal injuries, Complications of Fractures and Joint Injuries e.g. Myositis ossificans, Volkman's ischemic contracture, Compartment syndrome, Crush Syndrome, DVT, Thromboembolism, Fat Embolism.
28. Rehabilitation of trauma patient and Principles of Sukhchestaprachara - Physiotherapy and its use in skeletal injuries.
29. Treatment Principles of Asahanta Bhagna - Non-unions, Vishmolvana Sahanta - Malunions and Ignored or un-reduced dislocations.
30. Diagnosis and management principles of injuries of Vessels, Nerves, Tendons and Ligaments.
31. Head, Chest and Abdominal Injuries and management principles.
32. Pelvis and Spine injuries and their management principles.
33. Sports medicine and sports injuries - Sports medicine and sports related Shoulder injuries, Elbow injuries, Knee injuries, Ankle Injuries, Recurrent Dislocations and other sports related injuries.
34. Knowledge of Conventional and advanced procedures being done for Different Bone and Joint Injuries e.g. Open Reduction and Internal Fixation, Closed Reduction and Internal Fixation, External fixators and other operative techniques.
35. Knowledge of Plastic Surgery in orthopedics and Bone grafting techniques.
36. Knowledge of various surgical procedures being done for Different Bone and Joint Diseases.
37. Hand Surgery for Diseases, Deformities and Injuries.
38. Foot Surgery for Diseases, Deformities and Injuries.
39. Amputations and Arthrodesis - General Principles of Amputations /Arthrodesis and regional Amputations.
40. Knowledge of Diagnostic and Therapeutic Arthroscopy.

PAPER – IV - SPECIALITY NO-03
SANGYAHARAN VIGYAN – ANAESTHESIOLOGY

100 MARKS
100 HOURS

1. Knowledge of disorders like Unmada, Apasmara, Mada, Murrcha, Sanyasa and Stabdhatā etc.
2. Madataya, Stages of Madataya and its management.
3. Pharmacology of Medhya, Vednasthapak, Madkari, Sangyasthapak, Nidrajanan, Akshepjanan and shamana, Svedjanan, Hridyae, Hridyotejak, Raktbharshamak, Shoolprashaman, Vaman and hrillashar (Antiemetic) dravya as mentioned in Ayurvedic samhita and their application in Sangyahan.
4. Aroma therapy as complementary and alternative therapy in pain management and Palliative care.
5. Sangyahan Bhesaja Vigyan (Pharmacology related to Anesthesia)
Pharmacology of:
 - Drugs acting on Autonomic nervous system:
 - a. Cholinergic system and drugs- Agonist and antagonist
 - b. Adrenergic system and drugs- Agonist and antagonist
 - Autocoids and related drugs:
 - a. Histamine and Antihistaminic
 - b. 5HT and antagonist
 - c. NSAID'S
 - d. Prostaglandins and leukotrienes
 - Drugs acting on Respiratory system
 - Drugs acting on Somatic nervous system
 - a. Skeletal muscle relaxants – Depolarizer and Non-Depolarizer.
 - b. Local anesthetics
 - Drugs acting on central nervous system
 - a. General Anesthetics- Fixed and Volatile anesthetic agents.
 - b. Sedative and hypnotics
 - c. Anti epileptics
 - d. Anti psychotic and anti-maniacs
 - e. Opioids Analgesics and antagonists
 - Drugs acting on cardiovascular system
 - a. Cardiac glycosides
 - b. Anti arrhythmic drugs
 - c. Anti anginal and other anti ischemic drugs
 - d. Anti hypertensive drugs
 - Drugs acting on Kidneys
 - a. Diuretics
 - b. Anti diuretics
 - Coagulants and anti coagulants
6. Airway management- Intubation, failed intubation drill, LMA, Bag and mask ventilation.
7. Anesthesia For: General surgery, Obstetric and Gynecology, E.N.T. and Ophthalmic, Orthopedic, Dental, Pediatric, Urology, Plastic and Outpatient / Day care surgery.
8. Anesthesia for patients with: Diabetes mellitus, Thyroid diseases, inherited metabolic diseases, Obesity, Respiratory diseases, Cardiac diseases, Renal diseases, Geriatric problems and neuromuscular diseases.
9. Regional anesthesia:
 - Sub-arachnoid and epidural anesthesia, analgesia
 - Plexus and nerve blocks for upper and lower limb
 - Regional anesthesia for thorax and abdomen
 - Surface anesthesia, infiltration and field blocks

10. Complications of Regional and general anesthesia, morbidity, mortality and medico-legal aspects.
11. Anesthesia for Endoscopic, laparoscopic Surgery and Laser Surgery
12.
 - a. Monitoring in anesthesia:
 - Cardiovascular, Respiratory, Renal function, Neurologic and neuromuscular monitoring.
 - Peri- operative Thermo- regulation and monitoring
 - Peri- operative awareness and monitoring depth of anesthesia with BIS.
 - Peri- operative acid-base balance
 - Pt's positioning in anesthesia, its hazards and management
 - Peri- operative Fluid management and Blood transfusion.
 - Risks and hazards of anesthesia
 - b. Anesthesia equipments –
 - Medical gas systems
 - Breathing systems
 - Ventilators
 - Anesthesia machine
 - c. Post operative management-
 - Post anesthesia care
 - Post operative nausea and vomiting
 - Post operative Intra-Venous fluid therapy
 - Acute post operative pain
 - d. Miscellaneous-
 - HDU, ICU, CCPR- BLS & ACLS.
 - Parenteral nutrition.
 - Environmental factor and electrical safety
 - e. Management of Acute / Chronic Pain-
 - Assessment of pain
 - Peri-operative pain
 - Chronic pain syndrome-detection and prevention
 - WHO regime for Cancer pain
 - TENS, Behavioral therapy
 - f. Anesthesia in remote locations
 - g. Clinical care in extreme environments (At high and low pressure and space).
 - h. Relevance of Sammohana (Hypnosis), Acupressure and Acupuncture in Sangyahan.
 - i. Recent advances in research in Sangyahrana, Pain Management and Palliative Care. Scope and Application of principles of Ayurveda in Sangyahrana Research.

PAPER – IV - SPECIALITY NO – 04
MUTRA ROGA – UROLOGY

100 MARKS
100 HOURS

1. Anatomical and physiological knowledge of kidney, ureter, urinary bladder, prostate, seminal vesicles, urethra and penis.
2. Investigations of Mutravaha Srotas – Urinary tract.
3. Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and management of Ashmari – Urinary stone diseases.
4. Kidney and ureter – Clinical presentation, Investigations and Management of Congenital anomalies, Trauma, Infection, Neoplasm, Hydronephrosis, Hydroureter and Haematuria.
5. Urinary bladder - Clinical presentation, Investigations and Management of Congenital anomalies, Trauma, Infection, Neoplasm, Diverticulum, Vesico-vaginal

- fistula, Atony, Schistosomiasis, Urinary diversions, Retention of urine – Mutraghata and Mutrakruccha.
6. Urethra - Clinical presentation, Investigations and Management of Congenital anomalies – Hypospadias, Epispadias, Posterior urethral valve, Trauma, Infection, and Neoplasm.
 7. Prostate and seminal vesicles – Benign and malignant enlargement of prostate, Prostatitis, Prostatic abscess and Calculi.
 8. Penis – Clinical presentation, Investigations and Management of Congenital anomalies, Trauma, Infection, Phimosis, Paraphimosis, Peyronie’s disease and Neoplasm.
 9. Testis and scrotum-Clinical presentation, Investigations and Management of Congenital anomalies, Ectopic testis, Trauma, Infection, Neoplasm, Testicular torsion, Hydrocele, Varicocele, Spermatocele, Chylocele, Pyocele, Haematocele, Epididymal cyst and Fournier’s gangrene.
 10. Renal failure – Causes, Diagnosis, Investigations and Management.

PRACTICALS

Content:

1. Identification, uses, demonstration of surgical instruments and methods of sterilization.
2. Training of case taking, bed side clinicals and case presentation.
3. Training of Surgery related Diagnostic imaging techniques.
4. Training of Surgery related Pre-operative, Operative and Post-operative procedures.
5. Demonstration and Practical training in Anaesthesia.
6. P.G. Scholars shall develop the skills by observing, assisting and performing independently all surgical and parasurgical procedures.
7. P.G. Scholars shall develop the skills by observing, assisting and performing independently concerned specialities like Anushastra Vigyan - Parasurgical therapeutics, Asthi Sandhi Evam Marma Vigyan – Orthopaedics, Sangyahan Vigyan – Anaesthesiology, Mutra Roga – Urology etc.
8. Training of Surgical Emergencies and Trauma Management.

METHODS OF TRAINING AND TEACHING FOR M.S. (AYU) SHALYA TANTRA

- | | |
|--------------------------------|---------------|
| • Case Presentation | Once a Week |
| • Seminar | Once a Week |
| • Classroom Lectures | Thrice a Week |
| • Morbidity / Mortality | Once a Week |
| • Surgical Audit | Once a month |
| • Journal Club | Once a month |
| • Emergency Drills / Protocols | Once a Week |
| • Interesting Cases | Once a Month |
| • Assessment of Scholar | Once a Month |

Minimum Academic Requirements For PG Scholars

Case Presentation	Ten per year
Seminar	Five per year
Journal club	One per year

Distribution of marks (practical):

1. Dissertation Presentation and Teaching demonstration	- 20 marks
2. Bedside clinical case taking-	
Long case	- 20 marks
Short case	- 10 marks
3. Identification of instruments, images etc	- 10 marks
4. Demonstration of Surgical and Parasurgical Procedures	- 10 marks
5. Viva voce	- 30 marks

REFERENCE BOOKS:

1. Sushruta Samhita
2. Ashtanga Sangraha
3. Ashtanga Hridaya
4. Charaka Samhita
5. The Surgical instruments of the Hindus - Girindranath Mukhopadhyaya
6. Shalya Tantra Samuchchaya - Pandit Ramadesh Sharma
7. Shalya Vigyan (Part 1-2) - Dr. Surendra Kumar Sharma
8. Shalya Samanvaya (Part 1-2) - Vd. Anantaram Sharma
9. Shalya Pradeepika - Dr. Mukund Swaroop Verma
10. Soushruti - Dr. Ram Nath Dwivedi
11. Clinical Shalya Vigyan - Dr. Akhilanand Sharma
12. Bhagna Chikitsa - Dr. Prabhakar Janardhan Deshpande
13. Kshara sutra management in anorectal ailments - Dr. S.K. Sharma, Dr. K.R. Sharma and Dr. Kulwant Singh.
14. A manual on Fistula-in-ano and Ksharasutra Therapy - Dr. Manoranjan Sahu
15. Recent trends in the management of Arshas / Haemorrhoids - Dr. P. Hemantha Kumar
16. Anorectal diseases in Ayurveda - Dr. Sizoria and Dr. Praveen Kumar Chowdary.
17. Adhunik Shalya Chikitsa Siddhanta - Dr. Katil Narshingham Udupa
18. Agnikarma Technology Innovation - Dr. P.D. Gupta
19. Shalya Tantra Ke Siddhant - Dr. K.K. Takral
20. Arsha Evum Bhagander Mein sutra Avacharan - Vd. Kanak Prasad Vyas
21. Recent advances in Kshara Sutra - Dr. M. Bhaskar Rao
22. Leech application in Ayurveda - Dr. M. Bhaskar Rao
23. Kshara Sutra - Dr. S.N. Pathak
24. Text book of Shalya Tantra (Ayurvedic Surgery) - Dr. P. Hemantha Kumar
25. Shalya Shalaky Tantra - Vd. S.G. Joshi
26. Surgical ethics of Ayurveda - Dr. D.N. Pande
27. Anushastra Karma - Dr. D.N. Pande
28. Concept of Vrana is Ayurveda - Dr. Lakshman Singh
29. Significance for Poorva Karma in Surgical Patient - Dr. Lakshman Singh
30. Sangyahan Prakash - Dr. D.N. Pande
31. Marma Science and Principles of Marma Therapy - Dr. Sunil Kumar Joshi
32. Recent trends in the management of Bhagandara / Fistula-in-ano - Dr. P. Hemantha Kumar
33. Principles and Practice of Agnikarma - Dr. Anand Kumar and

34. Shalya Vigyan (Sachitra)
35. Text book of Surgery
36. Operative Surgery
37. Bailey and Love's Short Practice of Surgery
38. Text books of Operative Surgery
39. Principles of Surgery
40. Emergency Surgery
41. Manipal Manual of Surgery
42. SRB's Manual of Surgery
43. Surgery of the Anus, Rectum and Colon
44. Surgical pathology
45. Clinical methods in surgery
46. Textbook of Operative Surgery
47. A concise Text Book of Surgery
48. A manual on Clinical Surgery
49. A System of Surgical Diagnosis
50. Clinical Anatomy/ Surgical Anatomy
51. A Practical Guide to Operative Surgery
52. Manual of Surgical Instruments
53. Ward Procedures
54. Drugs and Equipment for Anaesthesia
55. Primary Anaesthesia
56. Synopsis of Anaesthesia
57. Miller's Anesthesia
58. Synopsis of Anesthesia
59. Practice of Anesthesia and Resuscitation
60. Essentials of Anesthesiology
61. Clinical Anesthesia
62. Textbook of Anesthesia
63. Practice of Anesthesia
64. Anesthesia and co-existing disease
65. Outline of Orthopedics
66. Fractures and Joint Injuries
67. Outline of Fracture
68. Practical Fracture Treatment
69. Clinical Orthopedic Examination
70. Apleys System of Orthopedics
71. Orthopedics – Principles & their Application
72. Text book of Orthopedics and Trauma Vol. I-IV
73. Campbell's Operative Orthopedics
74. Urology
75. Urology Instrumentation: A comprehensive guide
76. Text book of Operative Urology
77. Oxford Hand book of Urology
78. Smith and Tanagho's General Urology
79. Urological Emergencies in Clinical Practice
- Dr. Kanchan Shekokar.
- Anantram Sharma
- Sabistan
- Rob and smith
- Norman.S. Williams, Charles.V. Mann and R.C.G. Russell
- Farquharson's
- Schwartz
- Hamilton Bailey's
- Dr. Rajgopal Shenoy
- Sriram Bhat M
- John Goligher
- Willing Worth
- S. Das
- S. Das
- S. Das
- S. Das
- T.N. Patel
- John E. Skandalakis
- S. Das
- M.M. Kapur
- Patel Mansukh. B
- Arun kumar
- Maurice King
- Lee
- Ronald D Miller
- Alfred Lee
- Dr.P.K. Gupta et al.
- Prof. A.K. Paul
- Prof. A.K. Paul
- Aitkenhead
- Churchill Davidson
- Stoelting's
- John Crawford Adams and David Hamblen. L
- Watson-Jones
- John Crawford Adams
- R.McRae
- R.McRae
- Apley Louis Solomon
- Vol. I-II – Samuel L. Turek
- G.S. Kulkarni
- Vol. I-IV
- Campbell-Walsh
- Sabnis Ravindra B
- F.F.Marshall, J.W.McAninch
- John Reynard, Simon Brewster
- Jack W. McAninch, Tom F.Lue
- Hashim, John Reynard

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CENTRAL COUNCIL OF INDIAN MEDICINE
NEW DELHI

SYLLABUS OF AYURVEDACHARYA (BAMS) COURSE

INDEX

3RD PROFESSIONAL

3.1. AGADTANTRA	02-04
3.2. SWASTHAVRITTA	05-12
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3.4. KAUMARBHRITYA PARICHAYA	18-21
3.5. CHARAK SAMHITA (UTTARARDHA)	22

AGADTANTRA, VYAVAHAR-AYURVED EVUM VIDHIVAIIDYAK

(TOXICOLOGY, FORENSIC MEDICINE AND MEDICAL JURISPRUDENCE)

Theory One Paper – 100 Marks

Practical/Viva voce -50 Marks

Theory -200 hrs

Practical - 100 hrs

Part- A

50 Marks

- 1** Derivation, definition of Visha and Agadatantra. Scope of Agadatantra. Visha Utpatti, Visha Prabhava, Visha Pranaharana Kriya, Visha Guna, Visha Gati, Visha Vega Visha Sankata, Shanka Visha.
- 2** Definition of toxicology, Definition of poison, suicidal and homicidal poisons, classification of poisons, their action and route of administration, absorption, excretion, metabolism, diagnosis and general principles of treatment, duties of a medical practitioner in case of suspected poisoning.
- 3** Origin and Classification of Visha:-Its sources, Difference between Visha, Madya and Oja guna, Visha Upadrava and Visha Mukta Lakshana.
- 4** Tests for detection of Visha, and Modern Toxicological Techniques of detection of poisons
Visha Data Lakshana, Visha Peeta Lakshana, Signs and symptoms of Visha afflicted organs and personal effects. (Poisoning with Anjana, Lepa paduka, Abharana etc.
- 5** Introduction to Environmental Toxicology- Samuhika Vishaprayoga- effect of chemical and nuclear warfare.
- 6** Vishopakrama described by Charak, General principles of Management of poisoning.
- 7** Manifestation of poisoning due to poisons of plant origin their fatal Dose, fatal period, management of poisoning, post mortem appearance and its medico legal importance.
Visha and Upavisha- Arka, Snuhi, Langali, Karaveera, Gunja, Ahiphena, Dhattura, Bhallataka, Vatsanabha, Kupeelu, Jayapala, Bhanga & Tobacco, Parthenium hysteriphorus, Chitraka, Eranda, Digitalis and Cerebra Odallam.
- 8** Garavisha, Dooshivisha, Viruddhahara. Food adulteration and poisoning–classification, diagnosis, management and contemporary significance.
- 9** Jangama Visha – Detailed study of Sarpa, Keeta, Loota, Vrischika, Mooshika, Alarka – Visha; Lakshana, Bheda, Chikitsa and their Sadhyasadhyata (contemporary and classical views).
- 10** Introduction to poisoning due to Acids, Alkalis, metals, Non-metals, Asphyxiants and others, their Fatal Dose, Fatal period, Manifestation, management, medico legal importance and postmortem appearance of poisoning due to:
 - a) Acid and Alkalis– Sulphuric acid, Hydrochloric acid, Nitric acid, Hydrocyanic acid, Oxalic acid, Carboic acid, Formic acid, alkalis in general.
 - b) Asphyxiants – Carbon monoxide, Carbon dioxide, Hydrogen sulphide
 - c) Nonmetallic poisons – Phosphorous, Iodine
Metallic poisoning – Arsenic, Mercury, Lead, Copper, Zinc, Tin.
 - d) Others - Petroleum – Kerosene Organo phosphorus compounds -Aluminum

phosphate, Organo Chlorinated Compounds, Household poisons.

11 Madya and Madatyaya. Alcohol poisoning (Ethanol and Methanol).

12 *Introduction to Narcotic drugs and Psychotropic substances Act 1985.*

Part –B

50 Marks

- 1.** Definition of Vyavahara Ayurveda (Forensic medicine) and Vidhivaidyaka (Medical jurisprudence), concise history of Vyavahara Ayurveda (Forensic medicine) and Vidhivaidyaka (Medical jurisprudence). Introduction to Indian Penal Code, Indian Evidence Act and Criminal Procedure Code.
- 2.** Legal Procedures:- Inquest, Evidence, Witness, Courts and their powers.
- 3.** Personal identity and its Medico legal aspects, forensic odontology, Introduction to Forensic Serology and DNA profiling.
- 4.** Death and its Medico Legal Aspects, Medico Legal autopsy and *exhumation*.
- 5.** Injuries and thermal injuries, their medico Legal aspects, general introduction of weapons.
- 6.** Dowry deaths (Domestic Violence), their Medico Legal importance and laws in relation to it.
- 7.** Asphyxial deaths and its Medico Legal importance.
- 8.** Medico Legal importance of Pregnancy, Delivery; Impotence & Sterility, Abortion, Infanticide, battered baby. Virginity, Artificial Insemination, Legitimacy.
- 9.** Sexual offences, and their Medico Legal aspects. Sexual perversions.
- 10.** Introduction to Forensic psychiatry.
- 11.** Introduction to forensic laboratory.
- 12.** Ethics as in classical Texts. Types of Vaidya, Pranabhisara and Rogabhisara Vaidya, Qualities of Vaidya, Responsibilities of Vaidya, Chaturvidha Vaidyavrutti, Duties of Vaidya to his patient, Vaidya Sadvrittam, Apujya Vaidya, Code of conduct.
- 13.** Laws in relation to Medical practitioners: Indian Medicine Central Council Act.
- 14.** Maintenance of medical record.
- 15.** Physician's responsibility in criminal matters, Professional negligence, Civil negligence, Criminal negligence, Medico Legal aspects of Acquired Immune Deficiency Syndrome, Rights of an unborn child, Medical Termination of Pregnancy Act Transplantation of human organs Bill 1994, Pre Natal Diagnostic Testing Act, Malingering of feigned diseases, International Code of Medical Ethics for Doctors. Clinical establishment Act.

Consumer Protection Act 1986.

PRACTICAL

Practical Training

1. Post Mortem examination
2. Evidence in the court
3. Demonstrations in the Forensic & Toxicology museum
(Toxic & Anti toxic substances, medico legal specimens & Charts)
4. Clinical postings
5. Library Hours for compilation

Distribution of Practical Marks

- | | |
|--|----------|
| 1. Post Mortem examination and Court posting – Case Record | 10 Marks |
| 2. Practical/Clinical Record Book | 10 Marks |
| 3. Identification (spotting) | 10 Marks |
| 4. Viva – voce | 20 Marks |

Total

50 Marks

Reference Books

- | | |
|---|--|
| 1. Topics related to Agada Tantra from Charak Samhita, Sushrut Samhita, Ashtanga Hridaya, Ashtanga Samgraha, Kasyapa Samhitha, Yogaratnakara, Bhavaprakasha and Madhava Nidana. | |
| 2. Vidhivaidyaka (Vyavahar Ayurveda Vijnan) | Dr.Charuchandra Pathak |
| 3. Medical Jurisprudence and Toxicology | Modi |
| 4. Basavarajeeyam | Edited by Vd.Govardhan |
| 5. Agada Tantra | Sh. Ramanath Dwivedi |
| 6. Text book of Agada Tantra | Edited by Dr Huparikar, Dr.Joglekar |
| 7. Agadatantra ki Pathyapustaka | Edited By Dr Huparikar,
Dr.Joglekar |
| 8. Agad Tantra | Dr. Shekher Namboodri |
| 9. Vishachikitsa
(Ayurveda Toxicology English Translation) | Vaidya Balakrishnan Nair, Kerala |
| 10. Medical Ethics and Medical Laws in India | Dr. H.S. Mehta |
| 11. Toxicology Ayurvedic Perspective | VPSV Ayurveda college Kottakkal |
| 12. Kautilya Arthashastra (English) | Prof. Kangle |
| 13. Kautilya Arthashastra (Hindi) | Dr. Raghunath Singh |
| 14. Vyavahar Ayurveda | Dr.Ayodhya Prasad Achal |
| 15. Vyavahar Ayurveda Vigyanam | Dr.Indramohan Jha (Sachchan) |
| 16. Textbook of Forensic Medicine and Toxicology | Dr. V.V.Pillay |
| 17. Forensic Medicine | Dr. B. Umadathan |
| 18. Relevant Acts | Govt. of India |
| 19. Relevant topics from Manu Smriti | |

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3.2 SWASTHAVRITTA

Theory- Two papers - 100 marks each

Practical / Viva voce -100 marks

Lectures –200 Hrs

Practicals and demonstration – 100 Hrs

Paper-I

PART A- VAIYAKTIKA SWASTHAVRITTA

50 marks

Introduction

Definition of swastha & swasthya and swasthavritta. Arogya lakshana, swasthavritta prayojanam, WHO definition of health.

Dimensions of health-Physical, Mental, Social.

Concept of wellbeing- objective, subjective, standard of living, quality of life.

Dinacharya

1. Definition of Dinacharya
2. Aims and importance of dinacharya
3. Brahma Muhurta evam Utthana
4. Usha Jalapana
5. Sharirachinta
6. Malatyaga
7. Mukha prakshalan
8. Dantadhavana and preparation of Ayurvedic tooth powder and paste
9. Jihvanirlekhanavidhi
10. Anjana
11. Pratimarsha Nasya
12. Gandusha and Kavala
13. Tambulasevana
14. Dhoomapana
15. Abhyanga
16. Udvartana
17. Utsadana
18. Vyayama
19. Chankramana
20. Snana
21. Anulepana
22. Vastra dharana
23. Danda dharana
24. Padatra dharana
25. Chatra dharana
26. Ushnisha dharana
27. Ratnabharana dharana
28. Madhyahna charya
29. Cosmetic effect of Dinacharya procedures

Rathricharya

1. Sandhya charya
2. Rathri bhojana vidhi
3. Shayanavidhi according to Bhavamishra

Ritucharya

1. Importance of ritucharya
2. Ritu presentation as per different acharyas
3. Adana kala & visarga kala
4. Sanchaya-Prakopa-Prashamana of Dosha according to ritu
5. Doshashodhana in Ritu Charya
6. Relation of Agni bala and Ritu
7. Pathya and Apathya Ahara and Vihara in different ritus
8. a) Ritusandhi
b) Yamadamsthra
c) Rituharitaki
d) Rituviparyaya

Sadvritta

Description of Sadvritta and Achara Rasayana their role in Prevention and control of diseases.

Trayopastambha

i) Ahara- Nirukti, Swarupa, Pramukhatva, Ahara dravya Vargikaranam, Aharavidhividhana, Dwadashashana pravicharana, Ashtaharvidhivisheshayatanani, Pathyahara, Apathyahara, Samashana, Adhyashana, Vishamashana, Ahara dushparinama & tajjanya vyadhaya, Santarpanajanya evam Apatarpanajanya vyadhi, Viruddhahara and its effects, Shadrasabhojanasya mahatwam.

Dietetic standards, Proximate principles of Food, Nutritional requirements, Sources and deficiency diseases of Protein, Carbohydrate, Fat, Vitamins and Minerals.

Concept of balanced diet in Ayurveda, Nitya sevaneeya dravya, Balanced diet for different sections of people in the society, Social aspects of nutrition.

Aharavarga - Dhanya varga(Cereals and millets), Shaka and Harita varga (Leafy and Non leafy vegetables), Kanda varga (roots and tubers), Phala varga (Fruits), Taila varga(Fats and Oils), Ikshu varga & Madhya varga(Alcoholic Beverages), Dugdha varga (Milk and Milk products), Masala and vyanjana dravyas (Spices & Condiments), Kritanna varga(Prepared Food), Mamsa varga (Meat types).

Food hygiene

Milk hygiene-Milk composition, Source of infection (for Milk), Milk borne diseases, Clean and Safe milk, Pasteurization of milk.

Meat hygiene-Meat inspection, Slaughter house, Freshness of fish and egg. Fruits and Vegetables hygiene

Sanitation of eating places, Preservation of food, Food handlers, Food borne diseases, Food fortification, and Food adulteration, Food toxicants, Properties of Vegetarian and Non- vegetarian diet, Effects of spices and condiments

Consumption of Alcohol and its effects on personal and social health. Effects of pathya-apathya in life style disorders-Diabetes, Hypertension, Obesity and Coronary heart Disease.

ii) Nidra- Nirukti and Utpatti, Types , Nidra – Swasthya sambandha, Properties of Yukta Nidra, Effects of Ratri Jagarana, Diwaswapna, Anidra, Atinidra, Ahara and Vihara causing disturbed sleep , Ahara and Vihara Causing sound sleep. Duration of sleep according to age, Sleep in healthy and diseased persons.

iii) Brahmacharya – Brahmacharya and Abrahmacharya, Importance of Bharmacharya and Abrahmacharya, Vyavaya sambandhi niyama, Effects of Ativyavaya. Methods of Virya Raksha, Surataspriha(Libido) through Vajikarana, Viryanasa phala.

Roganutpadaniya- Concept of Vega- Adharaniya Vega and Dharaneeya Vega, Diseases due to vegadharana and their chikitsa, sharir shodhan.

Rasayana for Swastha-Nirukti, paribhasha(definition), classification and examples

Ashta nindita purusha

Menstrual hygiene

Part B (YOGA AND NISARGOPACHARA)

50 marks

YOGA

Introduction

Yoga shabda utpatti, definitions, Different schools of Yoga – Rajayoga, Hathayoga, Mantrayoga, Layayoga, Jnanayoga, Karmayoga, Bhaktiyoga.

Yoga prayojana

Ayurveda yoga sambandha, swasthya rakshane yogasya mahatvam

Yogabhyasa pratibhandhaka & siddhikara bhavas as per Hathayoga.

Mitahara and Pathyapathyani during Yogabhyasa.

Panchakosha Theory

Astanga yoga

Yama, Niyama

Asana and its importance

Standing Postures

Ardhakatichakrasana, Padahastasana, Ardhachakrasana, Trikonasana.

Sitting postures

Swasthika, Gomukhasana, Padmasana, Vajrasana, Bhadrasana, Shashankasana, Ushtrasana, Pashchimottanasana, Suptavajrasana, ardhmatsyendrasana, Siddhasana.

Supine Postures

Pavanamuktasana, Sarvangasana, Matsyasana, Halasana, Chakrasana,

Shavasana, Setubandhasana.

Prone postures

Bhujangasana, Shalabhasana, Dhanurasana, Makarasana.

Suryanamaskara – procedure and benefits.

Pranayama

Benefits of pranayama, time of practice, avara-pravara-madhyama lakshana, yukta-ayukta lakshana

Nadishudhi Pranayama .

Kumbhakabheda – suryabhedana, ujjayi, sheetali, Sitkari, Bhastrika, Bhramari

Murcha, Plavini.

Nadishudhilakshana

Shatkarma

Dhauti, Basti, Neti, Trataka, Nauli, Kapalabhati

Bandhas and Mudras

Shad chakras, Ida-pingala-sushumna nadis.

Pratyahara, Dharana, Dhyana, Samadhi

Description of Yoga in Ayurveda

Moksha and Muktatma lakshana and upaya, Naishthiki chikitsa, Satyabuddhi, Tatvasmriti, Ashta Aishwarya, Ashta siddhis.

NISARGOPACHARA (Prakritika chikitsa)

Definition, history, aims and objectives

Theories as per Western school of Naturopathy

Indian school – Panchabhutopasana

Relation of Ayurveda and Naturopathy

Importance of Naturopathy in present era.

Jalachikitsa(hydrotherapy) – Hot water treatment, Cold water treatment, foot and arm bath, Spinal bath, hip bath, abdominal wet pack, Steam bath, enema and whirl pool bath.

Mrittika chikitsa (Mud therapy)

Types of soil, doctrine of mud selection, mud bath.

Suryakirana sevana (sun bath - heliotherapy)

Mardana (Massage) – different methods and effects.

Diet types – Soothing, Eliminative, Constructive, Positive and negative diet, Acidic and alkaline diet

Upavasa chikitsa(Fasting therapy) – Importance, types, therapeutic effects of fasting.

Visrama chikitsa upayoga

PAPER II – SAMAJIKA SWASTHAVRITTA

Part A

50 marks

Janapadodhwamsa

Causes, Manifestations and control measures, importance of Panchakarma and Rasayana.

Vayu (Air)

Vayu guna according to sushruta samhita, Properties of Vayu as per different directions, Vayu shudhi prakara – Ayurvedic aspect.

Composition of air.

Air of occupied room- Thermal discomfort and comfort zone, indices of thermal comfort.

Air pollution – health and social aspects, Prevention and control of air pollution ,Global warming.

Ventilation and its types.

Mountain air & High altitude – Health problems

Jala (Ayurvedic and modern aspects)

Importance of water , safe and wholesome water, water requirements, properties, types and sources of water,water pollution and health hazards, Methods of water purification.

Hardness of Water.
Examination, Tests and analysis of water.
Rain water harvesting and water recycling

Bhumi and nivasa sthana(Land and housing)

Types of soil, soil & health, Land pollution, Bhumi shodhana, Nivasa yogya bhoomi, Social goals of housing, Housing standards, Mahanasa (Kitchen) standards, Rural housing, Housing and health, Overcrowding.

Prakasha(lightning)

Requirement of good lighting, natural lighting, artificial lighting, biological effects of lighting.

Dhwani pradooshana(Noise pollution) -Noise, Sources, effects, & control

Vikirana(Radiation)- sources, effects and control

Apadravya Nirmulana (Disposal of solid waste)

Different types of solid waste
Storage and collection of refuse
Methods of disposal of solid waste (Rural & urban)
Bio-medical waste management

Malanishkasana Vyavastha (Excreta Disposal)

Methods for Unsewered area and Sewered area
Latrines for camps, fairs and festivals
Disposal of dead body – Burial, Burning, Electric cremation.

Meteorology (Ritu evam Vatavarana jnanam)

Definition of weather and climate, factors influencing weather and climate.

Disaster management

Definition, natural and man-made disasters, epidemiologic surveillance and disease control.

Occupational Health

Occupational Hazards, Occupational Diseases, Prevention of Occupational Diseases, Health & precautionary measures, ESI Act, Indian factories Act.
Offensive Trades- Effects on health and precautionary measures .

School health services

Health problems of school children, aspects of school health service, duties of school medical officers, Maintenance of healthy environment

Epidemiology

Concept of Epidemiology, Dynamics of disease transmission, concept of diseases, concept of causation, Epidemiological triad, natural history of disease, concept of control, concept of prevention, Risks factor, modes of intervention, incidence and prevalence. Susceptible host, host defenses, Immunizing Agents, Disease prevention and control, investigation of epidemic.

Disinfection – definition, types.

Ayurvedic concept of Vyadhikshamatva and sankramaka rogas.

Epidemiology of communicable Diseases

Chicken Pox, Measles, Diphtheria, Pertussis, Mumps, Tuberculosis, SARS, Influenza, Pneumonia, Cholera, Polio, Viral Hepatitis , Typhoid, Leptospirosis, Dengue Fever, Chikungunia, Malaria, Filariasis , Leprosy, Rabies , Tetanus, Emerging and re-emerging diseases

Kuprasangaja vyadhi (STDs)

AIDS, Syphilis, Gonorrhoea, Chanchroid

Non-communicable disease epidemiology

Diabetes, Obesity, Hypertension, Coronary Heart Diseases, Rheumatic Heart Disease, Cancer

Chikitsalaya Bhavana (Hospital Building)

Part B

50marks

Prathamika swasthya samrakshana(Primary Health Care)

Definition, principle, elements,levels of health care.

Structure at village, sub centre, PHC,CHC, Rural hospital levels.

Health insurance, Private agencies, Voluntary health agencies, NGOs and AYUSH sector.

Role of Ayurveda in Primary Health Care.

Parivara kalyana Yojana (Family welfare Programmes)– Demography, demographic cycle, life expectancy.

Family planning, methods of family planning.

Matru sishu kalyana Yojana – MCH programme

Ante natal, intra natal, post natal, neo natal care. Child health problems and indicators of MCH care.

Preventive geriatrics–Problems of elderly,prevention and control measures.

World Health Organisation-Objectives,structure and functions.

International health agencies-United Nations agencies,Health work of bilateral agencies.

Alma Ata declaration

National Health Policy

Health statistics- Definition, Sources, uses Data collection, Classification, Presentation.

Vital statistics-Morbidity rates,Mortality rates ,Fertility rates.

Health survey

Swasthya prashasana(Health Administration) – Health administration at Central including AYUSH, state, district, village levels.

National health programmes

Tuberculosis(RNTCP), Leprosy(NLEP), AIDS (NACP), Blindness (NPCB), Polio(PPI),Diabetes (NDCP), Cancer (NCCP) , Guinea worm, Vector born disease control programme, NRHM, all the upcoming national health programmes, RCH programme, Universal Immunization Programme.

National Nutritional Programmes - IDD, Vitamin A prophylaxis, Mid day meal, anemia control programmes.

PRACTICALS

Demonstration of Dinacharya procedures- anjana, nasya, kavala, gandoosha dhoomapana, abhyanga, udvarttana.

Parichaya of aharadravya, immunization agents, disinfectants and family planning devices

Practical demonstrations of Asanas mentioned in the syllabus
Pranayama (Suryabhedana, Ujjayi, Shitali, Sitkari, Bhastrika, Bhramari and Nadishuddhi) and Shad karmas(Jala dhauti, Jalaneti, Sutraneti, Trataka, Kapalabhati).

Preparing and delivering of a health educational talk on health related issues.
A short compilation on any topic on environmental health.

Educational Visits

Observe the functioning of the Milk Dairy, Water purification unit, Sewage treatment unit, MCH/Family welfare centre, Leprosy hospital and industrial unit.

Visit to Primary Health Centre for knowledge of actual implementation of National health programmes including knowledge of rural health.

Visit of rural Ayurvedic dispensary.

Visit to naturopathy centre to observe naturopathic treatment modalities.

Health survey- Minimum 5 families of rural and urban areas.

There should be 3 case sheets for Yoga Naturopathy & pathya apanya together and 3 case sheets for communicable diseases.

Proformas for Case sheets/practical records/survey/Dinacharya projects etc should be prepared by the respective universities.

Practical and Viva Voce examination

Marks distribution

	100 marks
1. Vaiyaktika Swasthavritta	20
2. Samajik swasthavritta	20
3. Demonstration of Yoga	10
4. Naturopathy	10
5. Journal and compilation work	10
6. Viva voce	30

Reference Books:

Relevant portions of Charaka, Sushruta, Vagbhata, Sarngadhara, Bhavaprakasha, Yogaratnakara, Madhavanidana and Bhelasamhita.

Swasthavritta Samucchaya

- Pandit Rajeshwar dutt Shastri

Swasthya Vigyan

- Dr. Bhaskar Govind Ghanekar

Swasthya Vigyan

- Dr. Mukund swarup Varma

Swasthavritta

- Vaidya Sakad

Swasthavritta

- Dr. Ranade and Dr. Firke

Ayurveda Hitopadesh	- Vaidya Ranjit Rai Desai
Yoga and Ayurved	- Acharya Rajkumar Jain
Swasthavritta vighyan	- Dr. Ramharsha Singh
Swasthavrittam	- Dr. Brahmanand Tripathi
Swasthavrittam	- Dr. Shivkumar Gaud
Ayurvediya Swasthavritta	- Vaidya Jalukar Shastri
Patanjala yogasutra	- Patanjali Maharshi
Hathayogapradiipika	- Swatmaram Yogendra
Gheranda samhita	- Gherand Muni
Yoga Paddhati	- Bharatiya Prakritik Chikitsa Parishad
Yogik Chikitsa	- Shri. Kedar Nath Gupta
Sachitra Yogasan darshika	- Dr. Indramohan Jha
Yoga deepika	- Shri. B.K.S. Iyengar
Light on Yoga	- Shri. B.K.S. Iyengar
Light on Pranayama	- Shri. B.K.S. Iyengar
Yoga and yoga chikitsa	- Dr. Ramharsha Singh
Foundations of Contemporary Yoga	- Dr. Ramharsha Singh
Yoga Sidhant evam Sadhana	- Harikrishna Shastri datar
Prakritik chikitsa Vidhi	- Sharan Prasad
Prakritik chikitsa vighyan	- Verma
Preventive and Social Medicine	- J. Park
Preventive and Social Medicine	- Baride and kulkarni
Janasankhya Shiksha Sidhanta	- Dr. Nirmal Sahani
Evam upadesya	
Health Administration in India	- S.C.Seel
Health and family welfare	- T.L.Devaraj
Positive Health	- L.P. Gupta
Biogenic Secrets of food in Ayurveda	- L.P.Gupta
Smriti granthon mein nihit	- Dr. Smt. Nigam Sharma
Swasthaprakara samagri	
Dr. Reddy's comprehensive guide to Swasthavritta	- Dr.P.sudhakar Reddy
Nutritive value of Indian foods	- ICMR
Yoga and Nisargopachar	- Vd. Prama Joshi
Prachin Vangmay mein prakritik chikitsa	- swami Anant Bharati, CCRYN
Swasthavritta	- Vd Yashwant Patil and Vd. Vhawal
Food and nutrition	- Swaminathan
Organology and sensology in yoga	-Prashant S Iyengar
Yoga-A game for Women	-Geeta S Iyengar
Yoga-A game for Women(hindi translation)-Madhu Pandey	

3.3 PRASUTI TANTRA & STRIROGA

Marks 200 (100marks each paper)
Practical-100 marks
HOURS Theory-200 Hrs
Practical-100 Hrs

PAPER-1 PRASUTI TANTRA

PART-A

INTRODUCTION TO SUBJECT

STRI SHARIRAVIJNAN

Etymological origin of the word Stri. Artava vaha and Stanyavaha strotamsi. Tryavarta yoni Stri Vishishta, Peshi Marmani.

Anatomy of female reproductive system. (External and internal genital organs) Soft & Bony Pelvis and its obstetrical importance.

DESIRABLE (non detail)

Vayobhedena Stri sangnya

RAJO VIGYANA

Description of Raja, Artava and Prathama Rajo Darshana, Rajasvala Charya. Ritumati Lakshana, Ritumaticharya, Ritukala

Menarche, Menstrual cycle and their regulation by endocrine glands,

Ovulation –Importance in conception

DESIRABLE (non detail)

Concept of Stri Sukra

GARBHA VIGYANA

- a) Garbhasya paribhasha, Garbhadhanavidhi, Garbhavakranti, Garbha Sambhava samagri, Garbhakara bhava, Panchabhautikatwa of Garbha, Masanumasika Vridhi of Garbha, Garbha Poshana , Garbhasayasthe Garbhasthiti

Foetal attitude, lie, position, presentation

- b) Apari, GarbhaNabhinadi, Jarayu, Ulba

Formation, Development, Function of Placenta, Umbilical cord, Amniotic fluid

Foetal membranes -Abnormalities of Placenta

DESIRABLE (non detail)

Garbhalingotpatti, Garbhasya Avayavotpatti, Garbha Varnotpatti, Garbha Vikriti

GARBHINI VIGYANA

- a) Lakshana of Sadhyograhita Garbha, Lakshana of Vyakta Garbha, Pumsavana vidhi
Diagnosis of Pregnancy
- b) Garbhini vyavastha: Garbhini Paricharya, Garbha Upaghatakara Bhava, Dauhrida
Ante Natal care-Examination, Investigation and Management
- c) Garbha Vyapada: Nidana, Samprapthy and Chikitsa Garbhasrava and Garbhapata-
Garbha shosha-Upavishtaka, Nagodara, Upashushka, Leena garbha,
Antarmrita garbha, Raktagulma, Bahugarbhatha
- d) Abortions, Rh-incompatability-
Causes, clinical features, complications and management.

Gestational trophablastic neoplasias, Ectopic pregnancy, IUGR, Intrauterine foetal death, Multiple pregnancy

GARBHINI VYAPAD

- a) Hrillasa, Chardi, Aruchi, Atisara, Vibandha, Arsa, Udavarta, Sotha, Parikarthika, Vaivarnya, Kandu, Kikkisa, Pandu, and Kamala, makkala
- b) Common ailments of Pregnancy-High Risk Pregnancy, Emesis gravid arum, Gestational Anemia, Gestational Hypertension, Gestational Diabetes, Toxemias of Pregnancy, Jaundice, AIDS,

Ante Partum Hemorrhage causes, clinical features complications and Management

PART B

PRASAVA VIGYANA

- a) Prasava Paribhasha, Prasavahetu, Prasavkaala, Sutikagaranirman, Sangrahaniya Dravyani, Sutikagara pravesavidhi.
- b) Prasavavastha; Prajayani/ Upasthita Prasava/ Asannaprasava lakshana, Aavi. Prasavaparicharya, Jatamatraparicharya
- c) Normal Labour: -Definition of Labour, Physiology & Mechanism of Labour, Monitoring of Labour and management, Pictogram, Episiotomy, care and resuscitation of newborn.

PRASAVA VYAPAD

- a) Garbhasanga, Yonisamvarana, Aparasanga, Mudagarbha-defenition, Nidana, Types & Management
- b) Induction and augmentation of labour, Cervical dystocia, Cephalopelvic disproportion, Prolonged labour, Preterm labour, Post term labour, foetal distress, Assisted Labour, Caesarian
- c) Retention of Placenta, PPH - causes, clinical features and management, Genital tract Injuries during labour

DESIRABLE (non detail)

Uterine Inversion, Amniotic Fluid Embolism, Garbhashthithi parivarthan(Version), Forceps Delivery, Ventouse Delivery.

SUTIKA VIGYANA

- a) Sutika Paribhasha, Sutika Kaal, Sutika paricharya. Changes during sootika avastha(Sareerika&Manasika)
Normal and abnormal Puerperium and its Management
- b) Sutika Roga – Number of Sutika Roga, Sutika Jwara, Shotha and Makkala.
- c) Stanyavijnan- Sthanyadushti, Sthanyakshaya, Sthanyavidhi -their causes, clinical features and treatment
- d) Emergency care in obstetrics

DESIRABLE(non detail)Stana stanya –Pareeksha, Stanya sampat.

PART-2 STRI ROGA

PART-A

ARTAVA VYAPAD

- a) Artava-kshaya vridhi, Ashtartavadushti lakshana chikitsa
Asrigdara lakshana samprapti Chikitsa
- b) Menstrual disorders-Amenorrhoea, hypomenorrhoea, Oligomenorrhoea, Dysmenorrhoea, Abnormal uterine Bleeding

YONI VYAPAD

Sankhya, Nidana, Lakshana, Upadrava evam Chikitsa

Endometriosis, Fibroid uterus, Genital Prolapses, Retroverted Uterus, Pelvic infections, Cervical erosion, Pelvic Inflammatory Diseases

VANDHYATWA – Prakar, Nidana, Chikitsa

Infertility – Causes, Types, Investigations and Management.

Yoni Kanda, Yoni Arsa, Granthi, Arbud,

Pelvic Infections including Sexually Transmitted Infections, HIV, AIDS, Preventive measures.

MENOPAUSE-changes during menopause ,menopause syndrome, management.

DESIRABLE (non detail)

Congenital malformations of female genital tract.

Sukra vijnan –kshaya,vridhi, dushti hetu lakshana and chikitsa

Benign and Malignant tumours of Genital Tract

PART-B

STANA ROGA

- a) Stanakeela- nidana lakshana chikitsa, Stanagranthi, Stanavidradhi, Stanashoph Mastitis, Breast abscess, Galactocele -Etiopathology, clinicalfeatures, diagnosis, prognosis and complications
- b) Sthanik Chikitsa
Snehana, Swedana, Uttarabasti, Pichu, Varti, Lepana, Dhupana, Dhavana, Dahana, Ksharakarma -. Practical knowledge of all these procedures along with indications, complications and management.

Shastra Karma

Surgical procedures their Indications, Contraindications of cauterization of cervix, cervical dilatation and curettage, female surgical sterilization

Knowledge of indication and procedure of PAP smear. Endometrial biopsy and interpretation of the reports

Stri roga Sambandhita Pramukha Aushadhyai, Prasuti & Stri Roga Chikitsa Upayogi Yantra Shastra Parichaya and Vyadhivinishchaya Upaya (Investigative and Diagnostic Aids)

Garbhanirodhaka Upaya.

Parivar Niyojana, Reproductive and Child Health Care, AIDS/HIV control Programme, MCH, PNDT Act, MTP Act, and importance of current National Programme

Knowledge of important Commonly used Ayurvedic and Allopathic drugs used in Prasutitantra and Streeroga. Pharmacotherapeutics of allopathic drugs in obstetrics and Gynaecology

Record keeping,ethical and medicolegal issues in Streeroga and prasutitantra

DESIRABLE (non detail)

Laproscopy, hysteroscopy, hysterosalpingography, USG, X-RAY, Colposcopy, Cervical Biopsy. Granthi evum Granthi nirharan samanyajnan (Myomectomy, hysterectomy)

CLINICAL TRAINING-OBSTETRIC SKILLS

To perform independently

1. History taking and examination of antenatal and gynaecological cases
2. Diagnosis of Pregnancy, assessing of gestational period, to diagnose onset of labour
3. To monitor labour progress, able to plot Partogram
4. Observation of 10 labours
5. To diagnose abnormalities of labour and decide about the referral of the patient
6. Able to provide first aid for obstetric emergencies
7. Recognition of post partum complications
8. Counselling and promoting of breast feeding
9. Record 5 antenatal cases, 5 intrapartum and 5 post partum cases

To observe/assist-D&C, D&E, Caesarean section, Repair operations, Resuscitation of new born.

GYNAECOLOGICAL SKILLS -To perform independently

1. History taking and examination of gynaecological cases
2. Recording 10 gynaecological cases, 5 gynaecological procedures
3. Taking vaginal smear, high vaginal swab
4. Practical knowledge of sthanika chikitsa
5. Observation and practical knowledge of minor gynaecological procedures
6. Observation of Surgical procedures
7. Identification, uses., Demonstration of surgical instruments
8. Observation of Method of sterilization, MTP, Surgical procedures Hysterectomy, Oophorectomy

DISTRIBUTION OF PRACTICAL MARKS

1. Case taking-2cases –one Gynec,one obstetric- 30marks

2. Instruments ,Drugs, &Models-	20 marks
3.General Viva-	40 marks
4.Record -2-(one Prasuti, one streerog)-	10 marks
Total	100 marks

3.4. Kaumarbhritya (Ayurvedic Pediatrics)

Theory One Paper – 100 Marks
Practical Viva Voce - 50 Marks

Paper I

100 Marks

Kaumarbhritya Parichaya Evum Balaka Paricharya (Introduction to Ayurvedic Pediatrics and Child Care)

Part A

50 Marks

1. General introduction and scope of Kaumarbhritya (Ayurvedic Pediatrics), Definitions and terminologies used in Kaumarbhritya.
2. Scientific contribution of Kashyapa Samhita in Kaumarbhritya.
3. Vayobheda (Classification of age): Garbha, Bala, Kumara; Kshirada, Kshirannada & Annada etc. and modern classification of childhood period.
4. Prana Pratyagamanam (Neonatal Resuscitation): Methodology; complications and their management (Ayurvedic and modern view). Assessment of gestational age.
5. Navajata Shishu Paricharya (Neonatal Care): Care of the Jatmatra (Newly born child) and the Sadyojata, Care of the Samaya-purvajata Shishu (Preterm), Purnakalika Shishu (Full term), and Samaya-Paschatjata Shishu (Post term neonate), Nabhinala Chhedana (Cutting of umbilical cord), Complications of improper cutting of umbilical cord and its treatment, Rakshoghna Karma (Protective measures- Ayurvedic and modern view).
6. Navajata Shishu Parikshana (Examination of newborn): Ayu-Parikshana, Modern approach to Neonatal Examination
7. Navajat Shishu Poshana (infant feeding): Specific feeding schedule as per Ayurvedic texts and modern concept; Stanya-Sampat (Properties of normal breast milk) Stanyotpatti (Physiology of lactation), Stanya Sangathana (Composition of breast milk), Stanya Parikshana (Examination of breast milk), Stanya-Piyusha (Colostrum); Stanya-Pana-Vidhi (Techniques of breast feeding), Stanyakshaya-Stanyanasha (Inadequate production and absence of breast milk), Dhatri (wet nurse)- Stanyabhava dugdh Vyavastha (alternative feeding in the absence of breast milk), Various other milk feeding methods.
8. Stanyadosha (Vitiation of Breast milk), Stanya Shodhana (Purification of breast milk), Stanya Janana and Vardhanopakrama (Methods to enhance breast milk formation).
9. Garbha Vridhi Vikasa Krama: Samanya Parichaya (brief monthwise development of

fetus), Milestones of development during infancy and childhood including concepts of various Samskaras.

10. Poshana (Nutrition): Normal requirements of nutrients and common food sources.
11. Dantotpatti evum Danta Raksha Vidhi (Dentition and dental care): Danta-sampat (Characteristics of healthy teeth), Danta Nisheka evum Dantodbheda (Eruption of teeth), Dantodbhedjanya Vikara (Dentition disorders).
12. Vyadhikshamatva: General concepts of Bala (Immunity) and methods of Bala Vriddhi.
13. Prashan & Lehana: Indications, contra-indications, different drugs used in lehana
14. Knowledge of National Programs related to Child Health Care: Reproductive and Child Health (RCH) Program, Community Child Health Programs, Nutritional Programs, National Immunization Program and other programs incorporated by Govt. of India from time to time

Part B

50 Marks

Samanya Chikitsa Siddhanta and Balaroga (General Principles of Treatment and Management of Pediatric Disorders)

1. Bala Pariksha-vidhi Evam Shishu Vedana Parigyan (Examination of sick child and Diagnostic methods-Ayurvedic and modern). Samanya Chikitsa Siddhanta (General principles of treatment in children).
2. General Aushadhi Matra Nirdharana - for Ayurvedic and modern drugs preparations (drug doses according to age, weight and drug contents)
3. Specific therapeutic panchakarma procedures in children with special emphases on snehan, swedan and basti.
4. Prasava Kaleena Abhighata (Birth injuries): Shwasavrodha (Asphyxia neonatorum), Ulvaka, Upashirshaka (Caput Succidanum and Cephalohaematoma), Facial Paralysis, Erb's Paralysis, Bhagna (fractures).
5. Brief description of Sahajavyadhi (Congenital disorders): Sahaja Hridaya Vikara (Congenital Cardiac Disorders) Jalashirshaka (Hydrocephalus), Khandaoushtha (cleft lip), Khanda-Talu (cleft palate) Sanniruddha Guda (Anal stricture / imperforated anus), Pada Vikriti (Talipes equinovarus and valgus), Spina bifida, Meningocele, Meningomyelocele.
6. Brief knowledge of genetic disorders): Down syndrome, Turner Syndrome, Muscular dystrophy, Sickle-Cell Anemia, Thalassaemia, Sahaja Madhumeha (Juvenile diabetes).
7. Prasavottara Vyadhi (Neonatal disorders): Navajata Kamala (Neonatal Jaundice), Navajata Netrabhishyanda (Neonatal conjunctivitis), Nabhiroga (Umbilical disorders), Navajatshishu-raktavishmayata (Neonatal Septicemia)
8. Dushta Stanyapanajanya Vyadhi (Disorders due to Vitiated Milk): Lactose intolerance, Kshiralasaka, Kukunaka, Ahiputana (Napkin Rashes)
9. Kuposhanajanya Vyadhi (Nutritional disorders): Karshya, Phakka, Balashosha and Parigarbhika (Protein Energy Malnutrition), Vitamin and Micro-nutrient deficiency

disorders, Hyper-vitaminosis, failure to thrive.

10. Aupasargika Vyadhi (Infectious Diseases): Karnamula Shotha (Mumps), Romantika (Measles), Rubella, Masurika (Chicken Pox), Rohini (Diphtheria), Kukkura-Kasa (Whooping Cough), Dhanurvata (Tetanus), Krimiroga (Worm Infestations), Antrika Jwara (Typhoid), Mastisakavarnashotha (Meningitis), AIDS, Dengue, Malaria, Rajajakshma (Tuberculosis), Jivanujanya Yakrit Shotha (Hepatitis)
1. Srotas Vikara:
 - a) Pranavaha Srotas: Pratishtyaya (common cold), Kasa (Cough), Shwasa (Respiratory distress syndrome), Tamaka Shwasa (Bronchial Asthma), Utphuliika, Swasanaka Jwara (Pneumonia/Pneumonitis, Bronchiolitis), Gala shotha (Pharyngitis, Laryngitis), Talukantaka (Tonsillitis)
 - b) Annavaha_ Srotas: Ajirna (Indigestion), Atisara (Diarrhoea), Chhardi (Vomiting), Vibandha (Constipation), Mukhapaka (Stomatitis), Gudapaka (Proctitis), Parikartika (Anal fissure), Udarsula (Infantile Colic), Pravahika (Dysentery), Gudabhransa (Rectal Prolapse). Ama and its disorders like Ama vata jwara (Rheumatic fever).
 - c) Rasavaha Srotas: Jwara (Fever), Pandu (Anemia), Mridbhakshanajanya Pandu (Anemia associated with clay eating/Pica).
 - d) Raktavaha Srotas: Kamala (Jaundice), Raktapitta (Haemorrhagic disorders), Yakritodara (Hepatomegaly).and Pieehodara (Splenomegaly)
 - e) Mamsa-Medovaha Srotas: Apachi (Lymphadenitis), Galaganda (Goitre), Gandamala (Cervical Lymphadenopathy).
 - f) Mutravaha Srotas: Shopha in Vrikka (Glomerulonephritis and Nephrotic syndrome)
2. Anya Bala Vikara (Miscellaneous Pediatric Disorders), Apasmara (Epilepsy), Akshepa (Convulsions), Nirudhaprakasha (Phimosis), Cerebral palsy.
3. Behavioral Disorders of Children, their management and counseling: Breath holding spell, Shayyamutra (Bed wetting), Pica, Unmada, Autism, ADHD (Attention Deficit and Hyperactive Disorders), Jadatwa (Mental retardation).
4. Pran raksha vidhi (Life saving measures in children): Principles of management of Shock and Anaphylaxis, Poisoning, Foreign body in respiratory tract, Status epilepticus, Hemorrhage, Acute Renal Failure, Febrile Convulsion, Status Asthmaticus, Fluid and Electrolyte Management.
5. Balagraha: General description, classification, clinical features and management.

PRACTICAL

Content of Practical / demonstration

1. Clinical training of above mentioned disorders of children.
2. Exposure to -
 - a) Navajata Shishu Paricharya (Care of the newborn)
 - b) Pranapratyagamana Vidhi (Resuscitation procedure of new born)
 - c) Vaccination
 - d) Panchakarma Vidhi (Panchakarma procedures) especially Snehana, Swedana, Basti.
3. Knowledge of various equipments such as phototherapy unit, overhead radiant

- warmer, resuscitation equipments, Panchakarma equipments and their application
4. Knowledge of IV fluid administration, blood sampling
 5. Anthropometry measurements and their interpretation
 6. Various Ayurvedic & modern Procedures and investigations in pediatric practice

Distribution of Marks

Clinical work: Pediatric and neonatal case records [1.0 case sheets of each]	10 Marks
Patient Examination	20 Marks
Spotting	05 Marks
Viva – voce	15 Marks
Total	50 Marks

Reference Books

1. Kashyapa Samhita Complete Hindi translation by Satyapal Vidhyalankara English translation by Prof. Premvati Tiwari
 2. Principles & practice of Pediatrics in Ayurveda: Dr. CHS Shastry
 3. Child Health Care in Ayurveda: Prof. Abhimanyu Kumar
 4. Ayurvedic Concepts of human Embryology: Prof. Abhimanyu Kumar
 5. Kaumarbhritya by Prof. D.N. Mishra
 6. Kaumarbhritya Ke Antargata Balgraho Ka Kramika Evam Vaigyanika Adhyana by Prof. Chanchal Sharma
 7. Notes on Kaumarbhritya-by Dr. Dinesh K S
 8. Pran - Pratyagannanann-by Dr. B.M. Singh
 9. Ayurveda Dwara Matra Evam Shishu Paricharya by Dr. KS Patel,V.K.Kori & Raigopal
 10. Kaumarbhritya related references from Charaka Samhita, Sushruta Samhita Vagbhata etc.
 11. Clinical Methods in Paediatrics by Meharban Singh
 12. Pediatrics Emergencies by Meharban Singh
 13. Essential Pediatrics O,P. Ghai
 14. Text Book of Pediatrics Nelson
 15. Care of New Born by Meharban Singh
 16. Panchakarma in Pediatrics Dr. Yogita Srivas
-

3.5. CHARAK SAMHITA- UTTARARDHA

(Uttarardha: Chikitsa – Kalpa - Siddhi Sthana)

Theory- One Paper – 100 Marks

The marks of theory examination are distributed as follows:

- | | |
|--------------------|----------|
| 1. Chikitsa sthana | 60 Marks |
| 2. Kalpa sthana | 15 Marks |
| 3. Siddhi sthana | 25 Marks |

Reference Books

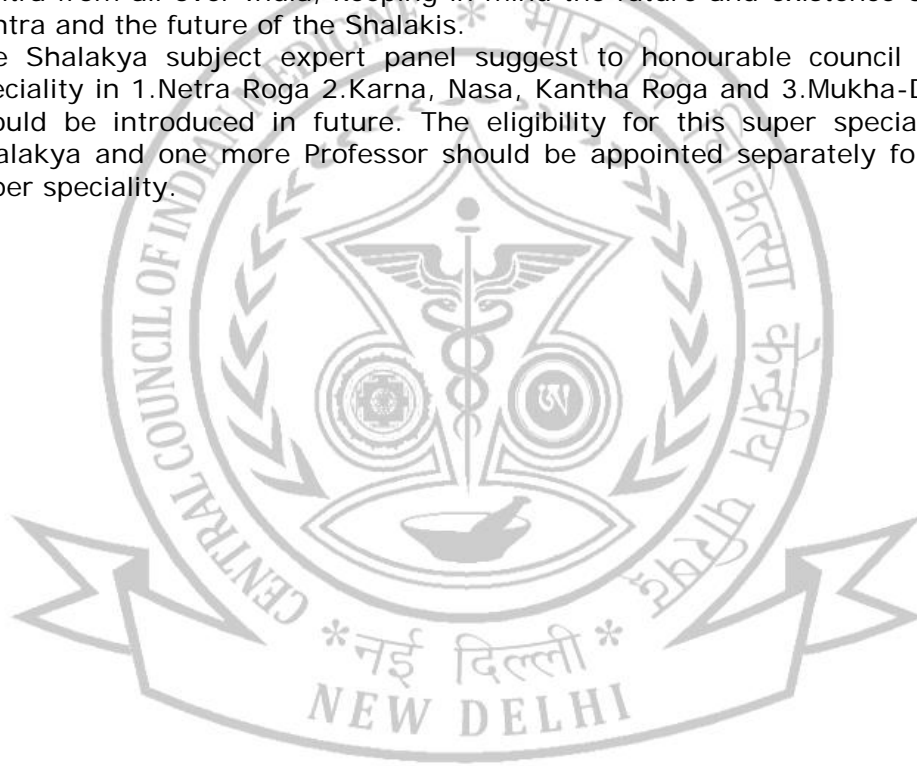
1. Charak Samhita -Chakrapani Tika (Sanskrit Commentary)
2. Charak Samhita (Hindi Commentary) Vd. Jayadev Vidyalankar or Vd. Atridev Vidyalankar or Prof. Gorakh Nath Chaturvedi & Kashinath Shastri or Dr. Brahmanand Tripathy or Dr. Ravidutta Tripathy
3. Charak Samhita (English Commentary): Dr. Ram Karan Sharma & Vd. Bhagwan Dash or Acharya Priyavrata Sharma.

CENTRAL COUNCIL OF INDIAN MEDICINE

POST GRADUATE FINAL YEAR 14. MS (AYU) SHALAKYA TANTRA (DISEASES OF EYE, EAR, NOSE, THROAT, HEAD, ORO- DENTISTRY)

PREAMBLE

- The MS Shalakyā is a speciality branch of Ayurveda, hence the degree should be specified as Master of Surgery in Shalakyā Tantra (Diseases of Eye, Ear, Nose, Throat, Head, Oro- Dentistry)
- This syllabus should be applicable for minimum 5 academic years.
- If the Hon'ble Council thinks of separating the Shalakyā Tantra PG in 3 parts again, first the division of teaching faculty as Professor, Associate Professor and Assistant Professor should be made available in each division of Shalakyā Tantra separately.
- The syllabus has been prepared by the hard work of the experts from Shalakyā Tantra from all over India, keeping in mind the future and existence of Shalakyā Tantra and the future of the Shalakis.
- The Shalakyā subject expert panel suggest to honourable council that super speciality in 1.Netra Roga 2.Karna, Nasa, Kantha Roga and 3.Mukha-Danta Roga should be introduced in future. The eligibility for this super speciality is MS-Shalakyā and one more Professor should be appointed separately for this each super speciality.



**MS(AYU) SHALAKYA TANTRA
(DISEASES OF EYE, EAR, NOSE, THROAT, HEAD, ORO- DENTISTRY)**

PRELIMINARY – PAPER II

**THEORY – 100 MARKS (3 HOURS)
PRACTICAL AND VIVA VOCE – 100 MARKS**

Part A – 50 marks

1. History and chronological development of Shalakyia Tantra.
2. Establishment and importance of 'Shirasouttamangatwam', 'Nasa Hi shirsodwaram', and 'Sarvendriyanam Nayanam Pradhanam'.
3. Applied Anatomy and physiology of Netra, Karna, Nasa, Mukha with related marmas and disease classification as per Ayurvedic classics.
4. Knowledge of Agropaharaniya in Shalakyia Tantra.
5. Fundamental knowledge of Sterilization and Anaesthesia in Shalakyia Tantra.
6. Swasthritta related to Shalakyia Tantra.
7. Description of Yantra, Shastra and anushastra related to Shalakyia Tantra.
8. Application of Panchakarma chikitsa in Urdhwajatrugata Vikaras.
9. Applied knowledge of various therapeutic procedures used in Netra rogas
10. Applied knowledge of various therapeutic procedures used in Karna-Nasa-Mukha-Danta and Shirorogas, like Karnaprakshalana, Karna dhoopana, Karnapichu, Karnapoorana, Nasaprakshalan, Nasapichu, Kavala, Gandusha, Pratarisana, Dhoomapana, Shiroabhyanga, Shiropichu, Shirodhara, Shirobasti etc.
11. Knowledge of Vranabandhana (bandaging of wounds) in Shalakyia Tantra.
12. Common classical yogas and single drug therapy in Shalakyia Tantra.
13. Pathyapathya in Shalakyia Tantra.

Part B – 50 marks

14. Critical analysis of nidana of Urdhwajatruvikaras.
15. Fundamentals of optics and refraction.
16. Clinical methods of eye examination and application of various aids and techniques with their respective interpretation viz. Retinoscopy, Refraction, Tonometry, Slit lamp examination, Pachymetry, Direct and Indirect Ophthalmoscopy, Gonioscopy, Perimetry, A scan, B scan, FFA (Fundus Fluorescein Angiography), OCT (Optical Coherence Tomography) etc.
17. Clinical methods of Ear examination with special reference to hearing and balance.
18. Fundamentals of Acoustics and Audiology.
19. Clinical methods of examination of Nose and Para nasal sinuses with various aids and techniques.
20. Clinical methods of Oro-Dental examination with various instruments and techniques.
21. Basic pharmacology of common drugs required in diagnostic and therapeutic procedures in Eye, ENT and Oro-Dentistry.
22. Eye donation and Eye banking.
23. Knowledge of handling of Bio-medical waste.

PAPER I- SHALAKYA - NETRA ROGA

THEORY – 100 MARKS (3 HOURS)

Part A – 50 marks

1. Nidanapanchaka and samanya chikitsa of netrarogas.
2. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Sandhigata, Vartmagata and Pakshmagatarogas with their comparative knowledge of modern science.
3. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Shuklagata and Krishnagatarogas with their comparative knowledge of modern science.
4. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Drishtigata and Sarvagatarogas with their comparative knowledge of modern science.
5. Descriptive knowledge of Ashtavidhashastrakarma (eight types of surgical procedures) and Chaturvidhachikitsa (Bheshaja, Shashtra, Kshara and Agni) and post operative care of the patient with respect to Netrarogas.
6. Diseases of eyelids and lacrimal apparatus and their Modern and Ayurvedic Management.
7. Disorders of conjunctiva, cornea and sclera and their Modern and Ayurvedic Management.

PART B – 50 marks

8. Disorders of uveal tract and lens and their Modern and Ayurvedic Management.
9. Disorders of vitreous, retina, optic nerve, visual pathway and visual cortex and their Modern and Ayurvedic Management.
10. Benign and malignant tumours of the eye and their Ayurvedic Management.
11. Study of Nayanabhighata with prevention and management.
12. Concept of congenital, developmental disorders of eye and prevention and management through Ayurveda and modern science.
13. Ocular motility disorders and their management as per Ayurvedic and modern science.
14. Neurological and systemic disorders affecting Eyes and their Modern and Ayurvedic Management.

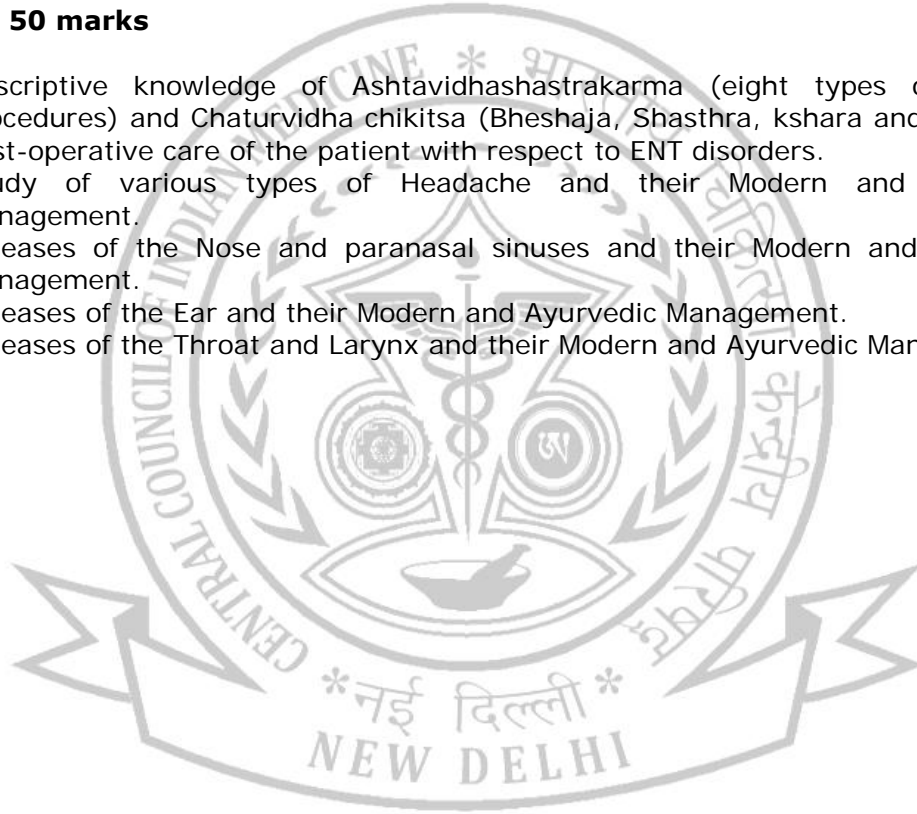
THEORY – 100 MARKS (03 HOURS)

PART A – 50 MARKS

1. Nidanapanchaka and samanya chikitsa of shiro-nasa-karna and kantharogas.
2. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Shiro and kapalgatha rogas with their comparative knowledge of modern science.
3. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Nasarogas with their comparative knowledge of modern science.
4. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Karna rogas with their comparative knowledge of modern science.
5. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Kantharogas with their comparative knowledge of modern science.

PART B – 50 marks

6. Descriptive knowledge of Ashtavidhashastrakarma (eight types of surgical procedures) and Chaturvidha chikitsa (Bheshaja, Shashtra, kshara and Agni) and post-operative care of the patient with respect to ENT disorders.
7. Study of various types of Headache and their Modern and Ayurvedic Management.
8. Diseases of the Nose and paranasal sinuses and their Modern and Ayurvedic Management.
9. Diseases of the Ear and their Modern and Ayurvedic Management.
10. Diseases of the Throat and Larynx and their Modern and Ayurvedic Management.

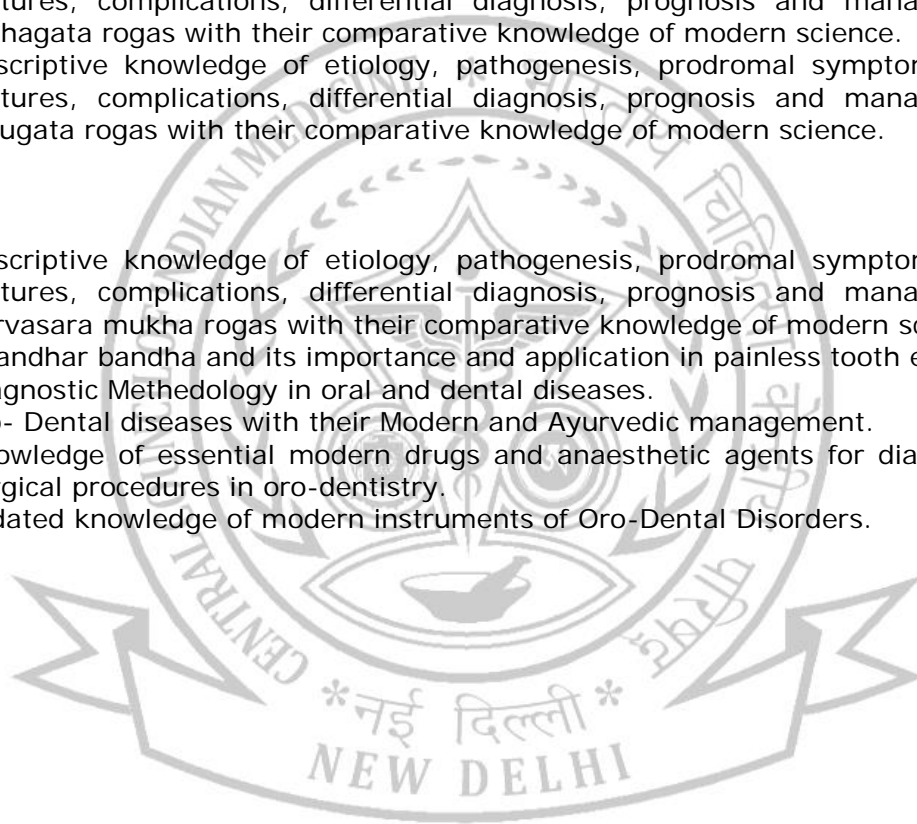


PART A

1. Nidanapanchaka and samanyachikitsa of Mukha-Dantarogas.
2. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Oshthagata rogas with their comparative knowledge of modern science.
3. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Dantamulagata rogas with their comparative knowledge of modern science.
4. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Danta rogas with their comparative knowledge of modern science.
5. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Jiwhagata rogas with their comparative knowledge of modern science.
6. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Talugata rogas with their comparative knowledge of modern science.

PART B

7. Descriptive knowledge of etiology, pathogenesis, prodromal symptoms, clinical features, complications, differential diagnosis, prognosis and management of Sarvasara mukha rogas with their comparative knowledge of modern science.
8. Jalandhar bandha and its importance and application in painless tooth extraction.
9. Diagnostic Methodology in oral and dental diseases.
10. Oro- Dental diseases with their Modern and Ayurvedic management.
11. Knowledge of essential modern drugs and anaesthetic agents for diagnosis and surgical procedures in oro-dentistry.
12. Updated knowledge of modern instruments of Oro-Dental Disorders.



PAPER IV – SHALAKYA – SHALAKYA VISHISHTHA CHIKITSA VIGYAN

**THEORY - 100 MARKS
(PART A- 50 AND PART B-50)**

PART A

1. Detailed study of Netra kriyakalpas and vishishta aushadhikalpas with their standard operative procedures and their critical analysis.
2. Critical analysis of classical treatment procedures and vishishta aushadhikalpas with their standard operative procedures and their critical analysis in the context of Anya Urdhwajatrugata vikaras .
3. Role of Panchakarma chikitsa in Urdhwajatrugata vikaras.
4. Descriptive knowledge of common ocular surgical procedures like DCT, DCR, Pterygium, Entropion, Ectropion, Chalazion surgery, Cataract surgery, Evisceration, Enucleation, surgical procedures of glaucoma etc.
5. Descriptive knowledge of common ENT surgical procedures like Tympanoplasty, Mastoidectomy, Septoplasty, Septorhinoplasty, antral puncture, Turbinectomy, Polypectomy, Tonsillectomy etc.
6. Applied aspects of Imaging in ENT and head disorders
7. Speech therapy and rehabilitation of the deaf and mute.
8. Recent advances in the medical and surgical management of Eye, ENT and Oro-Dental diseases.
9. Karna sandhana, Nasasandhana, Oshthasandhana with their recent advances.
10. Scope of researches in Shalakyia Tantra in present era.

PART B

11. Ocular emergencies and their management.
12. Knowledge of preventive and community ophthalmology -WHO and National Programme for control of blindness and role of Ayurveda in these Programmes.
13. Knowledge of National Programme for deafness and tinnitus and role of Ayurveda in these Programmes.
14. Knowledge of National Programme for prevention of oral cancer and role of Ayurveda in these Programmes. .
15. Effects of environmental hazards, and life style disorders of Eye, ENT and Oro dental disorders and their Modern and Ayurvedic preventive and therapeutic measures.
16. Management of emergencies in ENT, Head and Oro-Dental disorders.
17. Effects of systemic diseases on Eye, ENT, Head and Oro-dental diseases and their Modern and Ayurvedic management.
18. Removal of foreign bodies from Eye, ENT and Oro-Dental disorders.
19. Importance of Yogic kriyas, Yogasana and pranayama in Shalakyia tantra.
20. Knowledge of rules, regulations and medico-legal aspects of Ophthalmic, ENT and Oro-dental practice.

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CENTRAL COUNCIL OF INDIAN MEDICINE

**POST GRADUATE PRELIMINARY
14. MS (AYU) SHALAKYA TANTRA
(DISEASE OF EYE, EAR, NOSE, THROAT, HEAD, ORO- DENTISTRY)**

PRACTICAL AND VIVA VOCE – 100 MARKS

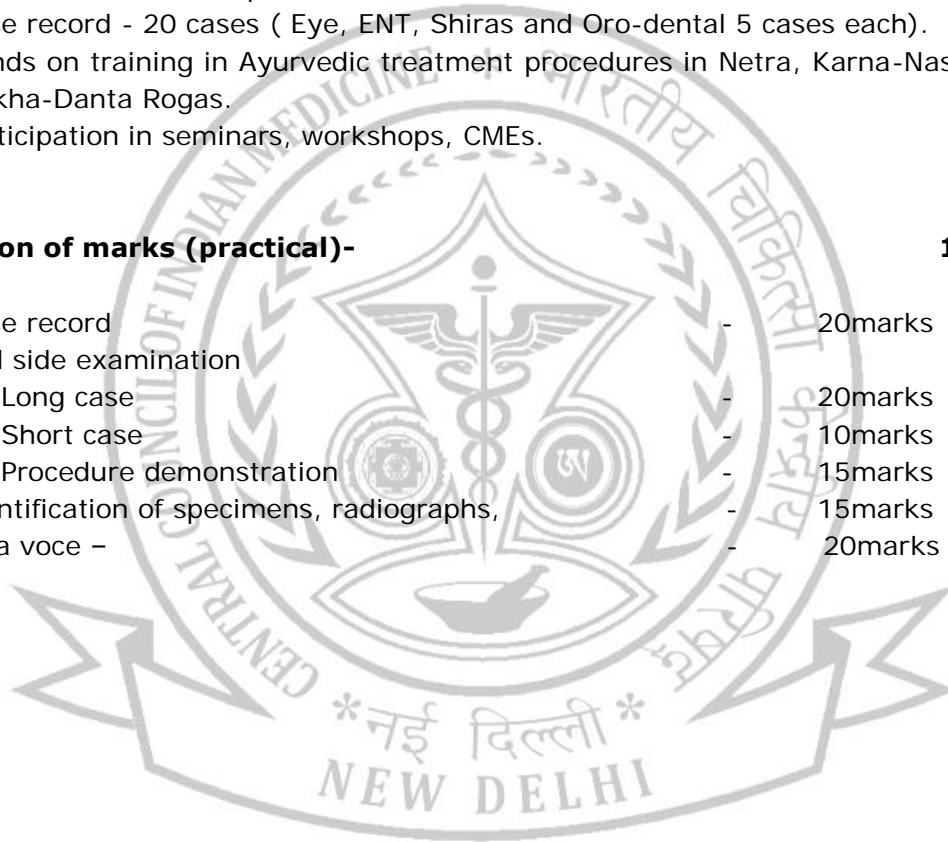
Pattern of practical/clinical training-

1. Clinical postings in OPD, IPD, Kriyakalpa and OT.
2. Clinical bed side case presentation
3. Case record - 20 cases (Eye, ENT, Shiras and Oro-dental 5 cases each).
4. Hands on training in Ayurvedic treatment procedures in Netra, Karna-Nasa – Shira – Mukha-Danta Rogas.
5. Participation in seminars, workshops, CMEs.

Distribution of marks (practical)-

100 marks

- | | | |
|--|---|---------|
| 1. Case record | - | 20marks |
| 2. Bed side examination | | |
| a. Long case | - | 20marks |
| b. Short case | - | 10marks |
| c. Procedure demonstration | - | 15marks |
| 3. Identification of specimens, radiographs, | - | 15marks |
| 4. Viva voce – | - | 20marks |



AYURVED DHANWANTARI – SHALAKYA TANTRA
MS (AYU) SHALAKYA
(DISEASES OF EYE, EAR, NOSE, THROAT, HEAD, ORO-DENTISTRY)

FINAL EXAM

METHODS OF TRAINING

- Intensive integrative training would be imparted to scholars in understanding the classical Ayurvedic aspects with an emphasis of critical comparative interpretation.
- Mandatory participation of scholars in seminars, group discussions, clinical demonstrations, journal review meetings, case study, continuing education activities and research clinical projects.
- During the first year course the emphasis would be laid to impart adequate knowledge on fundamental aspects and their applications, with a focus on latest diagnostic tools, instrumentations and laboratory procedures. Practical orientation and hospital based clinical training is an integral part of the curriculum all through and also to be involved in the dissertation work.
- In the second year, training would stress upon extending the knowledge on techniques and imparting skill for surgical performance, so that the scholar is able to perform Eye, Ear, Nose, Throat and Dental surgical procedures independently.
- In the third year the scholar should concentrate on the clinical work and research work based on the dissertation.
- The participation of the scholars in all the aspects of educational process is mandatory.
- Hospital postings- The student has to work for 6 terms (one term of 6 months each) of resident posting is compulsory you to which first 2 postings will be as a JR 1, the next two postings will be as a JR 2 and final two postings as JR 3.
- The student should also develop in the academic work of the department.

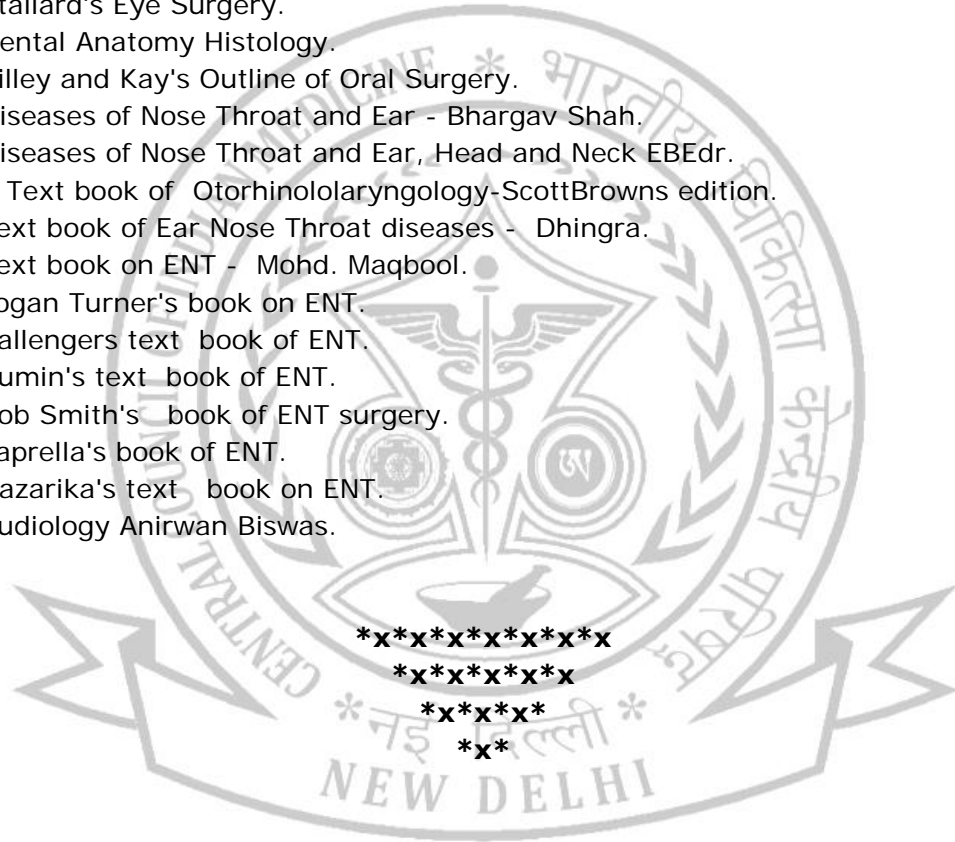
Pattern of Practical Examination:

- | | |
|---|-----------|
| 1. Bed side examination | |
| Short case 2 of 10 marks each | -20 Marks |
| Long case | -20 Marks |
| 2. Identification of specimen/Instrument/Radiograph | -10 Marks |
| 3. Thesis Presentation / Viva | -10 Marks |
| 4. Teaching Skills | -10 Marks |
| 5. Viva Voce | -30 Marks |

Reference Books

1. Charaka Samhita with commentaries.
2. Sushrut Samhita and vaghbhata with commentaries.
3. Astangahridaya and Astangasangraha with commentaries.
4. Madhavanidan with commentaries.
5. Bhavaprakashawith commentaries.
6. Sarangadhara Samhita with commentaries.
7. Sahstrayoga Sangraha.
8. Nimi Tantra.
9. Relevent part of Chakradhatta, Bhel Samhita, Harita Samhita.
10. Shalaky Tantra – Ramanath Dwivedi - R.C. Chaudhary.

11. The Actions and uses of Indigenous Ophthalmic Drugs N. Srikanth.
12. Clinical Examination of Ophthalmic Cases - Agarwal and Gupta.
13. Alder's Physiology of the Eye and Clinical Applications Cotlier, St. Louis.
14. Disease of the Lens and Vitreous, Glaucoma and Hypotony Duke Elder, St. Louis.
15. Manual of the Diseases of the Eye – Bailliere Tindal and Castell. Ahmed E, Dhanda, Dutta, L.C Jaypee brothers, May C and Worth C.
16. Ocular Differential diagnosis.
17. Clinical Ophthalmology – Roy Fedrick Hampton, Lea and Febiger Smith, R Varghese.
18. Manual of Refraction - Duke and Elder.
19. Hand Book of ophthalmology - B.M. Chaterjee.
20. Clinical Ophthalmology - Kanski.
21. Parsons Diseases of Eye.
22. Stallard's Eye Surgery.
23. Dental Anatomy Histology.
24. Killey and Kay's Outline of Oral Surgery.
25. Diseases of Nose Throat and Ear - Bhargav Shah.
26. Diseases of Nose Throat and Ear, Head and Neck EBEdr.
27. A Text book of Otorhinolaryngology-Scott Browns edition.
28. Text book of Ear Nose Throat diseases - Dhingra.
29. Text book on ENT - Mohd. Maqbool.
30. Logan Turner's book on ENT.
31. Ballengers text book of ENT.
32. Kumin's text book of ENT.
33. Rob Smith's book of ENT surgery.
34. Paprella's book of ENT.
35. Hazarika's text book on ENT.
36. Audiology Anirwan Biswas.



CENTRAL COUNCIL OF INDIAN MEDICINE

POST GRADUATE PRELIMINARY 13. M.S. (AYU) SHALYA TANTRA – GENERAL SURGERY

FUNDAMENTAL PRINCIPLES AND APPLIED ASPECTS OF SHALYA TANTRA

PAPER-II

**THEORY- 100 MARKS
TEACHING HOURS – 100 HRS**

PART A

50 MARKS

1. Etymology, Definition, Scope and Importance of Shalya Tantra.
2. Study of Sushruta Samhita Sutra Sthana from 1st to 29th chapter.
3. Study of modern surgical clinical methodology.
4. Applied anatomy, physiology and surgical pathology of common surgical conditions including relevant Ayurvedic aspects.
5. Applied aspect of Shat Kriyakala in the pathogenesis of surgical diseases.
6. Applied aspect of Prakriti in understanding the causes and role of treatment in surgical diseases.
7. Applied aspect of basic principles of Ayurveda in Rogi Pariksha (Trividha, Shadvidha, Ashtavidha and Dashavidha Pariksha).
8. Concept and applied aspect of Sadhya-Asadhya (Prognosis) - Arishtha lakshana.
9. Marma Sharira – Etymological derivation, definition, basic concept of Marma, origin, classification, Pramana. Consequences of Marmaghata and their management.
10. Concept of Shock - Its varieties, etiopathogenesis and management – Cardio-pulmonary resuscitation (CPR), Endo-tracheal intubation and Tracheostomy. Drug reactions and Anaphylaxis – Management.
11. Basics of Fluid, Electrolyte, Acid Base Balance and Nutrition
12. Antibiotics, Analgesics, Anti-inflammatory and Emergency drugs in surgical practice.
13. Surgical Emergency conditions and its management.
14. Sushruta's concept of Rakta. Raktasrava – Haemorrhage – Types, Patho-physiology, clinical features and management. Concept of Raktastambhana – Haemostasis. Bloodtransfusion – Indications, blood groups, components, compatibility and complications with management.
15. Medico-legal aspects in Surgery. Knowledge of documentation and record keeping.

PART B

50 marks

16. Knowledge of ancient and recent Yantra and Shastra – Surgical instruments and their application in surgical practice.
17. Asepsis and Antiseptics. Sterilisation (Nirjivanukaran) - methods and types.
18. Surgical infections – Sepsis, Cellulitis, Erysipelas, Tetanus, Gas gangrene. Handling and care of HIV and Hepatitis positive patients. Knowledge of conditions like Bacteraemia, Septicaemia, Toxaemia and Pyaemia
19. Sangyahan / Anesthesiology - Types, methods, indications, contraindications, complications and its management.
20. Trividha Karma – Purva, Pradhan and Pashchat Karma. Modern principles of pre-operative and post-operative care.

21. Ashtavidha Shastra Karmas.
22. Bandhana Karma – Recent advances.
23. Kshara Karma – Introduction, types, method of various preparations like Kshara, Kshara Varti, Kshara Pichu and applications.
24. Kshara Sutra – Method of preparation, standardization and applications.
25. Agnikarma – Introduction, types and applications.
26. Raktamokshana – Introduction, types and applications.
27. Application of Panchakarma therapy in surgical practice.
28. Scope of Pathya-Apathya in the management of surgical diseases.

PRACTICAL

100 MARKS

Content:

1. Hospital duties in OPD, IPD, OT and Casualty.
2. Case record – 50 cases.
3. Surgical cases – Observing/Assisting/Performing- 50 cases.
4. Knowledge of instruments required in surgical practices.
5. Ayurvedic and Modern diagnostic and therapeutic procedures.
6. Fluid therapy and blood transfusion.
7. Contraception and sterilizations.
8. Pre-operative, operative and post operative procedures.
9. Practical training of local Anaesthesia.
10. Interpretation of Imaging techniques.
11. Practical knowledge of Yogya vidhi – Experimental surgery and Simulators.

Distribution of marks (practical):

1. Presentation of related Research work like Synopsis and Case record - 20 marks
2. Bedside clinical case taking-

Long case	- 20 marks
Short case	- 10 marks
3. Identification of instruments, X-ray etc - 10 marks
4. Demonstration of Surgical and Parasurgical Procedure - 10 marks
5. Viva voce - 30 marks

REFERENCE BOOKS:

1. Sushruta Samhita
2. Ashtanga Sangraha
3. Ashtanga Hridaya
4. Charaka Samhita
5. The Surgical instruments of the Hindus - Girindranath Mukhopadhyaya
6. Shalya Tantra Samuchchaya - Pandit Ramadesh Sharma
7. Shalya Vigyan (Part 1-2) - Dr. Surendra Kumar Sharma
8. Shalya Samanvaya (Part 1-2) - Vd. Anantaram Sharma
9. Shalya Pradeepika - Dr. Mukund Swaroop Verma
10. Sushruti - Dr. Ram Nath Dwivedi
11. Clinical Shalya Vigyan - Dr. Akhilanand Sharma
12. Bhagna Chikitsa - Dr. Prabhakar Janardhan Deshpande
13. Kshara sutra management in anorectal ailments - Dr. S.K. Sharma, Dr. K.R.Sharma and Dr. Kulwant Singh.
14. A manual on Fistula-in-ano and Ksharasutra Therapy – Dr. Manoranjan Sahu
15. Recent trends in the management of Arshas / Haemorrhoids - Dr. P. Hemantha Kumar
16. Anorectal diseases in Ayurveda - Dr. Sizoria and Dr. Praveen

- | | |
|--|----------------------------------|
| 17. Adhunka Shalya Chikitsa Siddanta | Kumar Chowdary. |
| 18. Agnikarma Technology Innovation | - Dr. Katil Narshingham Udupa |
| 19. Shalya Tantra Ke Siddhant | - Dr. P.D. Gupta |
| 20. Arsha Evum Bhagander Mein sutra Avacharan | - Dr. K.K.Takral |
| 21. Recent advances in Kshara Sutra | - Vd. Kanak Prasad Vyas |
| 22. Leech application in Ayurveda | - Dr. M. Bhaskar Rao |
| 23. Kshara Sutra | - Dr. M. Bhaskar Rao |
| 24. Text book of Shalya Tantra (Ayurvedic Surgery) | - Dr. S.N.Pathak |
| 25. Shalya Shalakyta Tantra | - Dr. P. Hemantha Kumar |
| 26. Surgical ethics of Ayurveda | - Vd. S.G. Joshi |
| 27. Anushastra Karma | - Dr. D.N. Pande |
| 28. Concept of Vrana is Ayurveda | - Dr. D.N. Pande |
| 29. Significance for Poorva Karma in Surgical Patient | - Dr. Lakshman Singh |
| 30. Sangyahan Prakash | - Dr. Lakshman Singh |
| 31. Marma Science and Principles of Marma Therapy | - Dr. D.N. Pande |
| 32. Recent trends in the management of Bhagandara / Fistula-in-ano | - Dr. Sunil Kumar Joshi |
| 33. Principles and Practice of Agnikarma | - Dr. P. Hemantha Kumar |
| 34. Shalya Vigyan (Sachitra) | - Dr. Anand Kumar and |
| 35. Text book of Surgery | Dr. Kanchan Shekokar. |
| 36. Operative Surgery | - Anantram Sharma |
| 37. Bailey and Love's Short Practice of Surgery | - Sabistan |
| 38. Text books of Operative Surgery | - Rob and smith |
| 39. Principles of Surgery | - Norman.S. Williams, Charles.V. |
| 40. Emergency Surgery | Mann and R.C.G. Russell |
| 41. Manipal Manual of Surgery | - Farquharson's |
| 42. SRB's Manual of Surgery | - Schwartz |
| 43. Surgery of the Anus, Rectum and Colon | - Hamilton Bailey's |
| 44. Surgical pathology | - Dr. Rajgopal Shenoy |
| 45. Clinical methods in surgery | - Sriram Bhat M |
| 46. Textbook of Operative Surgery | - John Goligher |
| 47. A concise Text Book of Surgery | - Willing Worth |
| 48. A manual on Clinical Surgery | - S. Das |
| 49. A System of Surgical Diagnosis | - S. Das |
| 50. Clinical Anatomy/ Surgical Anatomy | - S. Das |
| 51. A Practical Guide to Operative Surgery | - S. Das |
| 52. Manual of Surgical Instruments | - T.N. Patel |
| 53. Ward Procedures | - John E.Skandalakis |
| 54. Drugs and Equipment for Anaesthesia | - S. Das |
| 55. Primary Anaesthesia | - M.M. Kapur |
| 56. Synopsis of Anaesthesia | - Patel Mansukh. B |
| 57. Outline of Orthopedics | - Arun kumar |
| 58. Fractures and Joint Injuries | - Maurice King |
| 59. Outline of Fracture | - Lee |
| | - John Crawford Adams and |
| | David Hamblen. L |
| | - Watson-Jones |
| | - John Crawford Adams |

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CENTRAL COUNCIL OF INDIAN MEDICINE
NEW DELHI

SYLLABUS OF AYURVEDACHARYA (BAMS) COURSE

INDEX

1ST PROFESSIONAL

1.1	PADARTHA VIGYAN AND AYURVED ITIHAS	2-6
1.2	SANSKRIT	7-8
1.3	KRIYA SHARIR	9-14
1.4	RACHANA SHARIR	15-18
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**1.1 PADARTHA VIGYAN EVUM AYURVEDA ITIHAS
(Philosophy and History of Ayurveda)**

**Theory- Two papers– 200 marks (100 each paper)
Total teaching hours: 150 hours**

PAPER-I

Padartha Vigyanam

100marks

PART A

50 marks

1. Ayurveda Nirupana

- 1.1 Lakshana of Ayu, composition of Ayu.
- 1.2 Lakshana of Ayurveda.
- 1.3 Lakshana and classification of Siddhanta.
- 1.4 Introduction to basic principles of Ayurveda and their significance.

2. Ayurveda Darshana Nirupana

- 2.1** Philosophical background of fundamentals of Ayurveda.
- 2.2** Etymological derivation of the word "Darshana". Classification and general introduction to schools of Indian Philosophy with an emphasis on: Nyaya, Vaisheshika, Sankhya and Yoga.
- 2.3** Ayurveda as unique and independent school of thought (philosophical individuality of Ayurveda).
- 2.4** Padartha: Lakshana, enumeration and classification, Bhava and Abhava padartha, Padartha according to Charaka (Karana-Padartha).

3. Dravya Vigyaniam

- 3.1 **Dravya:** Lakshana, classification and enumeration.
- 3.2 **Panchabhuta:** Various theories regarding the creation (theories of Taittiriyanopanishad, Nyaya-Vaisheshika, Sankhya-Yoga, Sankaracharya, Charaka and Susruta), Lakshana and qualities of each Bhoota.
- 3.3 **Kaala:** Etymological derivation, Lakshana and division / units, significance in Ayurveda.
- 3.4 **Dik:** Lakshana and division, significance in Ayurveda.
- 3.5 **Atma:** Lakshana, classification, seat, Gunas, Linga according to Charaka, the method / process of knowledge formation (*atmanah jnasya pravrittih*).
- 3.6 **Purusha:** as mentioned in Ayurveda - Ativahikapurusha/ Sukshmasharira/ Rashipurusha/ Chikitsapurusha/ Karmapurusha/ Shaddhatvatmakapurusha.
- 3.7 **Manas:** Lakshana, synonyms, qualities, objects, functions, dual nature of mind (*ubhayaatmakatvam*), as a substratum of diseases, penta-elemental nature (*panchabhutatmakatvam*).
- 3.8 Role of Panchamahabhuta and Triguna in Dehaprakriti and Manasaprakriti respectively.
- 3.9 Tamas as the tenth Dravya.
- 3.10 Practical study/application in Ayurveda.

PART B**50 marks****4. Gunavigyaniyam**

- 4.1 Etymological derivation, classification and enumeration according to Nyaya-Vaisheshika and Charaka, Artha, Gurvadiguna, Paradiguna, Adhyatmaguna.
- 4.2 Lakshana and classification of all the 41 gunas.
- 4.3 Practical / clinical application in Ayurveda.

5. Karma Vigyaniyam

- 5.1** Lakshana, classification in Nyaya.
- 5.2** Description according to Ayurveda.
- 5.3** Practical study/ application in Ayurveda.

6. Samanya Vigyaniyam

- 6.1 Lakshana, classification.
- 6.2 Practical study/ application with reference to Dravya, Guna and Karma.

7. Vishesha Vigyaniyam

- 7.1** Lakshana, classification.
- 7.2** Practical study/ application with reference to Dravya, Guna and Karma.
- 7.3** Significance of the statement "*Pravrittirubhayasya tu*".

8. Samavaya Vigyaniyam

- 8.1 Lakshana
- 8.2 Practical study /clinical application in Ayurveda.

9. Abhava Vigyaniyam

- 9.1 Lakshana, classification
- 9.2 Clinical significances in Ayurveda.

PAPER II**Padartha Vigyan and Ayurveda Itihas****100 marks****PART A - Pramana/ Pariksha- Vigyaniyam****75 marks****1. Pariksha**

- 1.1. Definition, significance, necessity and use of *Pariksha*.
- 1.2. Definition of *Prama*, *Prameya*, *Pramata*, *Pramana*.
- 1.3. Significance and importance of *Pramana*, Enumeration of *Pramana* according to different schools of philosophy.
- 1.4. Four types of methods for examination in *Ayurveda* (Chaturvidha-Parikshavidhi), *Pramana* in Ayurveda.
- 1.5. Subsudation of different *Pramanas* under three *Pramanas*.
- 1.6. Practical application of methods of examination (Parikshavidhi) in treatment (Chikitsa).

2. Aptopdesha Pariksha/ Pramana

- 2.1. Lakshana of Aptopadesha, Lakshana of Apta.
- 2.2. Lakshana of Shabda, and its types.
- 2.3. Shabdavritti-Abhidha, Lakshana, Vyanjana and Tatparyakhya. Shaktigrahahetu.
- 2.4. Vaakya: Characteristics, Vaakyarthagyanahetu- Aakanksha, Yogyata, Sannidhi.

3. Pratyaksha Pariksha/ Pramana

- 3.1. Lakshana of Pratyaksha, types of Pratyaksha- Nirvikalpaka- Savikalpaka with description, description of Laukika and Alaukika types and their further classification.
- 3.2. Indriya-prapyakaritvam, six types of Sannikarsha.
- 3.3. Indriyanam lakshanam, classification and enumeration of Indriya. Description of Panchapanchaka, Penta-elemental nature of Indriya by Panchamahabhuta (*Panchabhautikatwa* of Indriya) and similarity in sources (*Tulyayonitva*) of Indriya.
- 3.4. Trayodasha Karana, dominance of Antahkaran.
- 3.5. Hindrances in direct perception (*pratyaksha-anupalabdihikaaran*), enhancement of direct perception (Pratyaksha) by various instruments/ equipments, necessity of other Pramanas in addition to Pratyaksha.
- 3.6. Practical study/ application of Pratyaksha in physiological, diagnostic, therapeutics and research grounds.

4. Anumanapariksha/Pramana

- 4.1. Lakshana of Anumana. Introduction of Anumiti, Paramarsha, Vyapti, Hetu, Sadhya, Paksha, Drishtanta. Types of Anumana mentioned by Charaka and Nyayadarshana.
- 4.2. Characteristic and types of Vyapti.
- 4.3. Lakshana and types of Hetu, description of Ahetu and Hetwabhasa.
- 4.4. Characteristic and significance of Tarka.
- 4.5. Practical study/ application of Anumanapramana in physiological, diagnostic, therapeutics and research.

5. Yuktipariksha/ Pramana

- 5.1. Lakshana and discussion.
- 5.2. Importance in Ayurveda.
- 5.3. Practical study and utility in therapeutics and research.

6. Upamana Pramana

- 6.1 Lakshana.
- 6.2 Application in therapeutics and research.

7. Karya- Karana Siddhanta (Cause and Effect Theory)

- 7.1. Lakshana of Karya and Karana. Types of Karana.
- 7.2. Significance of Karya and Karana in Ayurveda.
- 7.3. Different opinions regarding the manifestation of Karya from Karana: Satkaryavada, Asatkaryavada, Parinamavada, Arambhavada, Paramanuvada, Vivartavada, Kshanabhangurvada, Swabhavavada, Pilupaka, Pitharpaka, Anekantavada, Swabhavoparamavada.

PART B - Ayurved Itihas

25 marks

1. Etymological derivation (Vyutpatti), syntactical derivation (Nirukti) and definition of the word Itihas, necessity of knowledge of history, its significance and utility, means and method of history, historical person (Vyakti), subject (Vishaya), time period (Kaal), happening (Ghatana) and their impact on Ayurveda.
2. Introduction to the authors of classical texts during Samhitakaal and their contribution: Atreya, Dhanwantari, Kashyapa, Agnivesha, Sushruta, Bhela, Harita, Charaka,

Dridhabala, Vagbhata, Nagarjuna, Jivaka.

3. Introduction to the commentators of classical Samhitas – Bhattaraharicchandra, Jējjata, Chakrapani, Dalhana, Nishchalakara, Vijayarakshita, Gayadas, Arunadutta, Hemadri, Gangadhara, Yogindranath Sen, Haranachandra, Indu.
4. Introduction to the authors of compendiums (Granthasamgrahakaala) – Bhavmishra, Sharngadhara, Vrinda, Madhavakara, Shodhala, Govinda Das (Author of Bhaishajyaratnawali), Basavraja.
5. Introduction to the authors of Modern era –Gana Nath Sen, Yamini Bhushan Rai, Shankar Dajishastri Pade, Swami Lakshmiram, Yadavji Tikramji, Dr. P. M. Mehta, Ghanekar, Damodar Sharma Gaur, Priyavrat Sharma.
6. Globalization of Ayurveda – Expansion of Ayurveda in Misra (Egypt), Sri Lanka, Nepal other nations.
7.
 - a) Developmental activities in Ayurveda in the post-independence period, development in educational trends.
 - b) Establishment of different committees, their recommendations.
 - c) Introduction to and activities of the following Organizations :- Department of AYUSH, Central Council of Indian Medicine, Central Council for Research in Ayurvedic Sciences, Ayurvedic Pharmacopeia commission, National Medicinal Plants Board, Traditional Knowledge Digital Library (TKDL)
 - d) Introduction to the following National Institutions :
 - National Institute of Ayurved, Jaipur.
 - IPGT&RA, Gujrat Ayurved University, Jamnagar.
 - Faculty of Ayurved, BHU, Varanasi.
 - Rashtriya Ayurveda Vidyapeetha, New Delhi.
8. Introduction to national & international popular journals of Ayurveda.
9. Introduction to activities of WHO in the promotion of Ayurved.

Reference Books:-

A). Padartha Vigyan:-

- | | |
|--|--------------------------------|
| 1. Padarthavigyan | Acharya Ramraksha Pathak |
| 2. Ayurvediya Padartha Vigyana | Vaidya Ranjit Rai Desai |
| 3. Ayurved Darshana | Acharya Rajkumar Jain |
| 4. Padartha Vigyana | Kashikar |
| 5. Padartha Vigyana | Balwant Shastri |
| 6. Sankhyatantwa Kaumadi | Gajananshastri |
| 7. Psycho Pathology in Indian Medicine | Dr. S.P. Gupta |
| 8. Charak Evum Sushrut ke Darshanik Vishay ka Adhyayan | Prof. Jyotirmitra Acharya |
| 9. Ayurvediya Padartha Vigyana | Dr. Ayodhya Prasad Achal |
| 10. Padartha Vigyana | Dr. Vidyadhar Shukla |
| 11. Padartha Vigyana | Dr. Ravidutta Tripathi |
| 12. Ayurvediya Padartha Vigyana | Vaidya Ramkrishna Sharma Dhand |
| 13. Ayurvediya Padartha Vigyan Parichaya | Vaidya Banwarilal Gaur |
| 14. Ayurvediya Padartha Darshan | Pandit Shivhare |

15. Scientific Exposition of Ayurveda Dr. Sudhir Kumar
16. Relevant portions of Charakasamhita, Sushrutasamhita.

B) History of Ayurveda:-

- | | |
|---|--------------------------------|
| 1. Upodghata of Kashyapasamhita
Paragraph of acceptance of Indian medicine | Rajguru Hem Raj Sharma |
| 2. Upodghata of Rasa Yogasagar | Vaidy Hariprapanna Sharma |
| 3. Ayurveda Ka Itihas | KaviraSuram Chand |
| 4. Ayurveda Sutra | Rajvaidya Ram Prasad Sharma |
| 5. History of Indian Medicine (1-3 part) | Dr. GirindrNath Mukhopadhyaya |
| 6. A Short history of Aryan Medical Science | Bhagwat Singh |
| 7. History of Indian Medicine | J. Jolly |
| 8. Hindu Medicine | Zimer |
| 9. Classical Doctrine of Indian Medicine | Filiyosa |
| 10. Indian Medicine in the classical age | AcharyaPriyavrata Sharma |
| 11. Indian Medicine (Osteology) | Dr. Harnley |
| 12. Ancient Indian Medicine | Dr. P. Kutumbia |
| 13. Madhava Nidan and its Chief
Commentaries (Chapters highlighting history) | Dr. G.J. Mulenbelt |
| 14. Ayurveda Ka BrihatItihasa | Vaidya Atridev Vidyalankara |
| 15. Ayurveda Ka Vaigyanikaltihasa | Acharya Priyavrata Sharma |
| 16. Ayurveda Ka Pramanikaltihasa | Prof. Bhagwat Ram Gupta |
| 17. History of Medicine in India | Acharya Priyavrata Sharma |
| 18. Vedomein Ayurveda | Vaidya Ram GopalS hastri |
| 19. Vedomein Ayurveda | Dr. Kapil Dev Dwivedi |
| 20. Science and Philosophy of Indian Medicine | Dr. K.N. Udupa |
| 21. History of Indian Medicine from
Pre-Mauryan to Kushana Period | Dr. Jyotirmitra |
| 22. An Appraisal of Ayurvedic Material in
Buddhist literature | Dr. Jyotirmitra |
| 23. Mahayana Granthon mein nihita
Ayurvediya Samagri | Dr. RavindraNathTripathi |
| 24. Jain Ayurveda Sahitya Ka Itihasa | Dr. Rajendra Prakash Bhatnagar |
| 25. Ayurveda- Prabhashaka Jainacharya | Acharya Raj Kumar Jain |
| 26. CharakaChintana | Acharya Priyavrata Sharma |
| 27. Vagbhata Vivechana | Acharya Priyavrata Sharma |
| 28. Atharvaveda and Ayurveda | Dr. Karambelkara |
| 29. Ayurvedic Medicine Past and Present | Pt. Shiv Sharma |
| 30. Ancient Scientist | Dr. O.P. Jaggi |
| 31. Luminaries of Indian Medicine | Dr. K.R. Shrikanta Murthy |
| 32. Ayurveda Ke Itihasa Ka Parichaya | Dr. RaviduttaTripathi |
| 33. Ayurveda Ke Pranacharya | Ratnakara Shastri |
| 34. Ayurveda Itihasa Parichaya | Prof. Banwari Lal Gaur |

1.2 संस्कृतम्

THEORY - ONE PAPER - 100 marks

TEACHING HOURS - 90 hours

PART-A

50 marks

संस्कृतव्याकरणाध्ययनम्

- 1- संज्ञाप्रकरणम्
- 2- विभक्त्यर्थाः
- 3- सन्धिप्रकरणम् (सन्धिविच्छेदः, सन्धिकरणम्)
- 4- षड्लिंगप्रकरणम् (षड्भूतव्ययेषु)
- 5- धातुप्रकरणम् (धातुरूपाण्येव)
(भ्वादिगण्य धातूनां पञ्च लट्लोट्लङ्गीट्विधिलिङ्लकारेषु रूपाणि)
- 6- वाच्यप्रयोगाः (कर्तरि कर्मणि भाववाच्यप्रयोगाः)
- 7- समासप्रकरणम्
- 8- प्रत्ययाः
(णिच्, क्त, क्तवतु, शतृ, शानच्, तुमुन्, तव्यत्, तृच्, क्त्वा, ल्यप्, ल्युट्, अनीयर्, मतुप्, इनि, तन्, इतच्, अण्, इञ्, इक्, त्व, ता, षन्, इम्, निच्, तः, त्र, दा, धा, तरप्, तमप्, टाप्, डाप्)
- 9- अनुवादः
A) From English / Hindi / regional language to Sanskrit
B) From Sanskrit to English / Hindi / regional language
C) Identification and correction of grammatical errors in the given sentences

The sentences for translation should be selected from the under mentioned reference books-

- 1) Laghusiddhanta Kaumudi- Acharya Varadaraja (Commentary by Shri Dhananand Shastry)
- 2) Brihatrayee- (Charaka Samhita, Sushruta Samhita, Ashtanga Hridayam)
- 3) Anuvada Chandrika-Chakradhara Hansa Nautiyal
- 4) Sanskruta Ayurved Sudha- Dr. Banwari Lal Gaur
- 5) Rachananuvada Kaumudi- Dr. Kapildev Dwivedi
- 6) Bhasha Sopanam- Published by Rashtreeya Samskruta Samsthanam, New Delhi

PART- B**50 marks****भाषाध्ययनम्**

- 1.) आयुर्वेदार्थग्रन्थाध्ययनायुः—जमचूपेम उमजीवक वऱजनकल वऱलनतअमकं ।तीं छतंदर्जी ;नौतनजौं डीपजंए
नौतममतौ जीदंडए ढेचजमत.4द्व 25 marks
- 2.) वैद्यकीय—सुभाषितसाहित्यम् (अध्यायाः 1—10) 15 marks
- 3.) पंचतन्त्रम्—अपरीक्षितकारकम् (क्षपणक कथातः मूर्खपण्डितकथापर्यन्तम्
पंचकथाः) 10 marks

REFERENCE BOOKS-

- 1.) Sushruta Samhita, Shareera Sthanam, Chapter-4
- 2.) Prabhashanam Work Book, Su.sam.chap.4
Published by-AYURVEDA ACADEMY® BANGALORE;
Email-ayuacademy@gmail.com
- 3.) Vaidyakeeya Subhashita Sahityam - Dr. Bhaskara Govinda Ghanekar
- 4.) Panchatantra-(Apareekshitakarakam) -Pt. Vishnu Sharma

1.3 KRIYA SHARIR (PHYSIOLOGY)

**Theory-Two Papers-200 Marks (100 marks each)
Teaching hours-180 hours**

PAPER- I

100 marks

PART- A

50 marks

1. Conceptual study of fundamental principles of Ayurvediya Kriya Sharir e.g - Panchamahabhuta, Tridosha, Triguna, Loka-Purusha Samya, Samanya-Vishesha. Description of basics of Srotas.
2. Definition and synonyms of the term Sharir, definition and synonyms of term Kriya, description of Sharir Dosha and Manasa Dosha. Mutual relationship between Triguna-Tridosha & Panchmahabhuta. Difference between Shaarir and Sharir. Description of the components of Purusha and classification of Purusha, role of Shatdhatupurusha in Kriya Sharira and Chikitsa.
3. Dosha- General description of Tridosha. Inter relationship between Ritu-Dosha-Rasa-Guna. Biological rhythms of Tridosha on the basis of day-night-age-season and food intake. Role of Dosha in the formation of Prakriti of an individual and in maintaining of health. Prakrita and Vaikrita Dosha.
4. Vata Dosha: Vyutpatti (derivation), Nirukti (etymology) of the term Vata, general locations, general properties and general functions of Vata, five types of Vata (Prana, Udana, Samana, Vyana, Apana) with their specific locations, specific properties, and specific functions.
Respiratory Physiology in Ayurveda, Physiology of speech in Ayurveda.
5. Pitta Dosha: Vyutpatti, Nirukti of the term Pitta, general locations, general properties and general functions of Pitta, five types of Pitta (Pachaka, Ranjaka, Alochaka, Bhrajaka, Sadhaka) with their specific locations, specific properties, and specific functions. Similarities and differences between Agni and Pitta.
6. Kapha Dosha: Vyutpatti, Nirukti of the term Kapha, general locations, general properties and general functions of Kapha, five types of Kapha (Bodhaka, Avalambaka, Kledaka, Tarpaka, Śleshaka) with their specific locations, specific properties, and specific functions.
7. Etiological factors responsible for Dosha Vriddhi, Dosha Kshaya and their manifestations.
8. Concept of Kriyakala.
9. Prakriti:
 - a) Deha- Prakriti: Vyutpatti, Nirukti, various definitions and synonyms for the term 'Prakriti'. Intra-uterine and extra-uterine factors influencing Deha-Prakriti, classification and characteristic features of each kind of Deha-Prakriti.
 - b) Manasa- Prakriti: Introduction and types of Manasa- Prakriti.
10. Ahara: Definition, classification and significance of Ahara, Ahara-vidhi-vidhana, Ashta Aharavidhi Viseshayatana, Ahara Parinamkar Bhava.

11. Aharapaka (Process of digestion): Description of Annavaha Srotas and their Mula. Role of Grahani & Pittadhara Kala.
12. Description of Avasthapaka (Madhura, Amla and Katu). Description of Nishthapaka (Vipaka) and its classification. Separation of Sara and Kitta. Absorption of Sara. Genesis of Vata-Pitta-Kapha during Aharapaka process. Definition of the term Koshtha. Classification of Koshtha and the characteristics of each type of Koshtha.
13. Agni – Definition and importance, synonyms, classification, location, properties and functions of Agni and functions of Jatharagni, Bhutagni, and Dhatvagni.

PART- B

50 marks

Modern Physiology

- a) Definition and mechanisms of maintenance of homeostasis. Cell physiology. Membrane physiology. Transportation of various substances across cell membrane.
- b) Resting membrane potential and action potential.
- c) Physiology of respiratory system: functional anatomy of respiratory system. Definition of ventilation, mechanism of respiration, exchange and transport of gases, neural and chemical control of respiration, artificial respiration, asphyxia, hypoxia. Introduction to Pulmonary Function Tests.
- d) Physiology of Nervous System: General introduction to nervous system, neurons, mechanism of propagation of nerve impulse, physiology of CNS, PNS, ANS; physiology of sensory and motor nervous system, Functions of different parts of brain and physiology of special senses, intelligence, memory, learning and motivation. Physiology of sleep and dreams, EEG. Physiology of speech and articulation. Physiology of temperature regulation.
- e) Functional anatomy of gastro-intestinal tract, mechanism of secretion and composition of different digestive juices. Functions of salivary glands, stomach, liver, pancreas, small intestine and large intestine in the process of digestion and absorption. Movements of the gut (deglutition, peristalsis, defecation) and their control. Enteric nervous system.
- f) Acid-base balance, water and electrolyte balance. Study of basic components of food. Digestion and metabolism of proteins, fats and carbohydrates. Vitamins & Minerals- sources, daily requirement, functions, manifestations of hypo and hypervitaminosis.

PAPER- II

100 marks

PART- A

50 marks

1. Dhatu:

Etymology, derivation, definition, general introduction of term Dhatu, different theories related to Dhatuposhana (Dhatuposhana Nyaya)

2. Rasa Dhatu:

Etymology, derivation, location, properties, functions and Praman of Rasa-dhatu. Physiology of Rasavaha Srotas, Formation of Rasa Dhatu from Aahara Rasa, circulation of Rasa (Rasa-Samvahana), role of Vyana Vayu and Samana Vayu in Rasa Samvahana. Description of functioning of Hridaya. Ashtavidha Sara (8 types

of Sara), characteristics of Tvakasara Purusha, conceptual study of mutual interdependence (Aashraya-Aashrayi Bhaava) and its relation to Rasa and Kapha. Manifestations of Kshaya and Vriddhi of Rasa.

3. Rakta Dhatu:

Etymology, derivation, synonyms, location, properties, functions and Praman of Rakta Dhatu. Panchabhautikatva of Rakta Dhatu, physiology of Raktavaha Srotas, formation of Raktadhatu, Ranjana of Rasa by Ranjaka Pitta, features of Shuddha Rakta, specific functions of Rakta, characteristics of Raktasara Purusha, manifestations of Kshaya and Vriddhi of Raktadhatu, mutual interdependence of Rakta and Pitta.

4. Mamsa Dhatu :

Etymology, derivation, synonyms, location, properties and functions of Mamsa Dhatu, physiology of Mamsavaha Srotasa, formation of Mamsa Dhatu, characteristics of Mamsasara Purusha, manifestations of Kshaya and Vriddhi of Mamsa Dhatu .Concept of Peshi.

5. Meda Dhatu :

Etymology, derivation, location, properties, functions and Praman of Meda Dhatu, physiology of Medovaha Srotas, formation of Medo Dhatu, characteristics of Medasara Purusha and manifestations of Kshaya and Vriddhi of Meda.

6. Asthi Dhatu:

Etymology, derivation, synonyms, location, properties, functions of Asthi Dhatu. Number of Asthi. Physiology of Asthivaha Srotas and formation of Asthi Dhatu, characteristics of Asthisara Purusha, mutual interdependence of Vata and Asthi Dhatu, manifestations of Kshaya and Vriddhi of Asthi Dhatu.

7. Majja Dhatu :

Etymology, derivation, types, location, properties, functions and Praman of Majjaa Dhatu, physiology of Majjavaha Srotas, formation of Majja Dhatu, characteristics of Majja Sara Purusha, relation of Kapha, Pitta, Rakta and Majja, manifestations of Kshaya and Vriddhi of Majja Dhatu.

8. Shukra Dhatu:

Etymology, derivation, location, properties, functions and Praman of Shukra Dhatu, physiology of Shukraravaha Srotas and formation of Shukra Dhatu. Features of Shuddha Shukra, characteristics of Shukra-Sara Purusha, manifestations of Kshaya and Vriddhi of Shukra Dhatu.

9. Concept of **Ashraya-Aashrayi** bhava i.e. inter-relationship among Dosha, Dhatu Mala and Srotas.

10. Ojas: Etymological derivation, definition, formation, location, properties, Praman, classification and functions of Ojas. Description of Vyadhikshamatva. Bala Vriddhikara Bhava. Classification of Bala. Etiological factors and manifestations of Ojavisramsa, Vyapat and Kshaya.

- 11. Upadhatu:** General introduction, etymological derivation and definition of the term Upadhatu. Formation, nourishment, properties, location and functions of each Upadhatu.
- Stanya: Characteristic features and methods of assessing Shuddha and Dushita Stanya, manifestations of Vriddhi and Kshaya of Stanya.
 - Artava: Characteristic features of Shuddha and Dushita Artava. Differences between Raja and Artava, physiology of Artavavaha Srotas.
 - Tvak: classification, thickness of each layer and functions.
- 12. Mala:** Etymological derivation and definition of the term Mala. Aharamala: Enumeration and description of the process of formation of Aharamala.
- Purisha: Etymological derivation, definition, formation, properties, quantity and functions of Purisha. Physiology of Purishavaha Srotas, manifestations of Vriddhi and Kshaya of Purisha.
 - Mutra: Etymological derivation, definition, formation, properties, quantity and functions of Mutra. Physiology of Mutravaha Srotas, physiology of urine formation in Ayurveda, manifestations of Vriddhi and Kshaya of Mutra.
 - Sveda: Etymological derivation, definition, formation and functions of Sveda. Manifestations of Vriddhi and Kshaya of Sveda. Description of Svedvaha Srotas
 - Dhatumala: Brief description of each type of Dhatumala.
- 13. Panchagyanendriya:** Physiological description of Panchagyaanendriya and physiology of perception of Shabda, Sparsha, Rupa, Rasa and Gandha. Physiological description of Karmendriya.
- 14. Manas:** Etymological derivation, definition, synonyms, location, properties, functions and objects of Manas. Physiology of Manovaha Srotas.
- 15. Atma:** Etymological derivation, definition, properties of Atma. Difference between Paramatma and Jivatma; Characteristic features of existence of Atma in living body.
- 16. Nidra:** Nidrotpatti, types of Nidra, physiological and clinical significance of Nidra; Svapnotpatti and types of Svapna.

PART –B

50 marks

Modern Physiology

- Haemopoetic system – composition, functions of blood and blood cells, Haemopoiesis (stages and development of RBCs, and WBCs and platelets), composition and functions of bone marrow, structure, types and functions of haemoglobin, mechanism of blood clotting, anticoagulants, physiological basis of blood groups, plasma proteins, introduction to anaemia and jaundice.
- Immunity, classification of immunity: Innate, acquired and artificial. Different mechanisms involved in immunity: Humoral (B-cell mediated) and T-Cell mediated immunity. Hypersensitivity.
- Muscle physiology – comparison of physiology of skeletal muscles, cardiac muscles and smooth muscles. Physiology of muscle contraction.
- Physiology of cardio-vascular system: Functional anatomy of cardiovascular system. Cardiac cycle. Heart sounds. Regulation of cardiac output and venous

return. Physiological basis of ECG. Heart-rate and its regulation. Arterial pulse. Systemic arterial blood pressure and its control.

5. Adipose tissue, lipoproteins like VLDL, LDL and HDL triglycerides.
6. Functions of skin, sweat glands and sebaceous glands.
7. Physiology of male and female reproductive systems. Description of ovulation, spermatogenesis, oogenesis, menstrual cycle.
8. Physiology of Excretion – functional anatomy of urinary tract, functions of kidney. Mechanism of formation of urine, control of micturition. Formation of faeces and mechanism of defecation.
9. Endocrine glands – General introduction to endocrine system, classification and characteristics of hormones, physiology of all endocrine glands, their functions and their effects.

PRACTICAL

100 marks

Teaching hours-180

Ayurvedic practical

1. Assessment of Prakriti
2. Assessment of Dosha (Features of Vriddhi- Kshaya)
3. Assessment of Dhatu (Features of Vriddhi- Kshaya)
4. Assessment of Agni
5. Assessment of Koshtha
6. Assessment of Sara
7. Nadi pariksha

Modern physiology practical

1. Introduction to laboratory instruments- Simple & Compound Microscope, Scalp vein set, bulbs for blood collection, Sahli's Haemometer, Haemocytometer, pipettes, Urinometer, Albuminometer, Stethoscope, B.P. Apparatus, Harpenden's caliper, Clinical Hammer, Tuning Fork, Stop Watch, Thermometer, Centrifuge machine, ECG Machine
2. Collection of blood sample – prick, vene-puncture method, use of anticoagulants
3. Preparation of blood smear and staining
4. Estimation of Hemoglobin
5. Microscopic examination of blood
 - a. Total RBC count
 - b. Total WBC count
 - c. Differential leucocyte count
6. Packed cell volume (PCV) demonstration
7. ESR demonstration
8. Bleeding time, Clotting time
9. Blood grouping and Rh typing
10. Examination of Cardio-Vascular system
 - a. Pulse examination
 - b. Arterial blood pressure measurement
 - c. Examination of heart sounds
 - d. ECG demonstration
11. Examination of Respiratory system
 - a. Respiratory rate
 - b. Breath sounds
 - c. Spirometry
12. Examination of Nervous System- Sensory & Motor.

13. Urine examination –Physical examination, chemical examination. Test for normal constituents of urine. Detection of specific gravity and reaction of urine.

Distribution of Practical marks

1. Laboratory Practical	- 20
2. Human Experiment	- 15
3. Spotting	- 15
4. Prakriti Saradi pariksha	- 20
5. Practical Record	- 10
6. Viva- voce	- 20

REFERENCE BOOKS:-

- Ayurvediya Kriyasharir - Ranjit Rai Desai
- Kayachikitsa Parichaya - C. Dwarkanath
- Prakrit Agni Vigyan - C. Dwarkanath
- Sharir Kriya Vigyan - Shiv Charan Dhyani
- Abhinava Sharir Kriya Vigyana - Acharya Priyavrata Sharma
- Dosha Dhatu Mala Vigyana - Shankar Gangadhar Vaidya
- Prakrita Dosha Vigyana - Acharya Niranjana Dev
- Tridosha Vigyana - Shri Upendranath Das
- Sharira Tatva Darshana - Hirlekar Shastri
- Prakrita Agni Vigyana - Niranjana Dev
- Deha Dhatvagni Vigyana - Vd. Pt. Haridatt Shastri
- Sharir Kriya Vigyana (Part 1-2) - Acharya Purnchandra Jain
- Sharir Kriya Vigyana - Shri Moreshwar Dutt. Vd.
- Sharira Kriya Vijnana (Part 1 and 2) – Nandini Dhargalkar
- Dosha Dhatu Mala Vigyana - Basant Kumar Shrimal
- Abhinava Sharir Kriya Vigyana - Dr. Shiv Kumar Gaur
- Pragyogik Kriya Sharir - Acharya P.C. Jain
- Kaya Chikitsa Parichaya - Dr. C. Dwarkanath
- Concept of Agni - Vd. Bhagwan Das
- Purush Vichaya - Acharya V.J. Thakar
- Kriya Sharir - Prof. Yogesh Chandra Mishra
- Sharir Kriya Vigyana - Prof. Jayaram Yadav &Dr. Sunil Verma.
- Basic Principles of Kriya-Sharir (A treatise on Ayurvedic Physiology) by Dr. Srikant Kumar Panda
- Sharir Kriya – Part I & Part II – Dr. Ranade, Dr. Deshpande & Dr. Chobhe
- Human Physiology in Ayurveda - Dr Kishor Patwardhan
- Sharirkriya Vignyan Practical Hand Book– Dr.Ranade, Dr.Chobhe, Dr. Deshpande
- Sharir Kriya Part 1 – Dr.R.R.Deshapande, Dr.Wavhal
- Sharir Kriya Part 2 – Dr. R.R.Deshapande, Dr.Wavhal
- Ayurveda Kriya Sharira- Yogesh Chandra Mishra
- Textbook of Physiology - Gyton & Hall
- A Textbook of Human Physiology – A.K.Jain
- Essentials of Medical Physiology - Sembulingam, K.
- Concise Medical Physiology - Chaudhari, Sujit K.
- Principals of Anatomy & Physiology - Tortora & Grabowski
- Textbook of Medical Physiology- Indu Khurana

1.4 RACHNA SHARIR (ANATOMY)

**Theory- Two Papers-200 Marks-(100 marks each)
Teaching Hours-180 hours**

PAPER-I

100 marks

PART-A

50 marks

1. Shariropkramaniya Shaarira

Sharira and shaarira vyakhya (definitions of sharira and shaarira), shadangatvam (six regions of the body), anga pratyanga vibhaga (sub divisions). Mrita sharir samshodhan. Shaarira shastra vibhaga, shaarira gyan prayojana . Constitution of purusha according to dhatubheda, panchabhautikatvam, trigunatmakatvam, tridoshamayatvam, karma purusha, and doshadhatumala-mulakatvam.

2. Paribhasha Shaarira

Kurcha, kandara, jala, asthisanghat, seemanta, seevani, rajju, snayu and lasika.

3. Garbha Shaarira

Garbha definitions, explanation of shukra, artava, garbhadhana. Role of tridosha and panchmahabhuta in the fetal development. Beeja, beejabhaga and beejabhagavayava, linga vinischaya, masanumasika garbha vridhhi-krama, garbhottpadakbhava, garbhavridhhi bhava, garbha poshana, apara nirmana , nabhinadi nirmana. Aanga pratyanga utpatti.

4. Pramana Shaarira: Anguli pramana.

5. Asthi Shaarira

Asthi vyakhya, number, types, asthi swaroota, vasa, meda and majja.

6. Sandhi Shaarira

Sandhi vyakhya, numbers, types of asthi sandhi.

7. Sira, Dhamani, Srotas Shaarira

- Definition, types and number of sira and dhamani.
- Description of Hridaya.
- Srota shaarira: Definition, types of srotas and srotomula.

8. Peshi Shaarira

- Peshi vyakhya, structure, types, number and importance.
- Description of Peshi.

9. Koshtha Evam Ashaya Shaarira

- Definition of koshta and number of koshtanga.
- Types and description of ashaya.

10. Kalaa Shaarira

Kalaa: definition and types.

11. Uttamangiya Shaarira

Shatchakra, ida, pingala and sushumna nadi - brief description.

12. Marma Shaarira

Marma: definition, number, location, classification, clinical importance with viddha lakshana. Explanation of trimarmas. Detail description of marmas.

13. Indriya Shaarira

Definition of indriya, indriya artha and indriya adhisthan, their number and importance. Description of gyanendriya, karmendriya and ubhayendriya (manas).

PART-B

50 marks

1. Definition and branches of anatomy. Preservation methods of the cadaver.

2. Anatomical Terminologies

Anatomical position, Planes, and explanation of anatomical terms related to skin, fasciae, bones, joints and their movements, muscles, ligaments, tendons, blood vessels, nerves,.

3. Embryology

Definitions and branches of embryology. Embryo and fetus. Sperm and ovum, fertilization. Cleavage. Germ layers formation and their derivatives. Laws of heredity, Sex determination and differentiation, Month-wise development of embryo. Foetal circulation, placenta formation, Umbilical cord formation.

4. Osteology

Bone: Definition, ossification, structure and types. Description of bones with clinical anatomy.

5. Arthrology

Joints: Definition, structure types and movements. Description of joints of extremities, vertebral joints and temporomandibular joint with their clinical anatomy.

6. Cardiovascular system

- a. Definition, types and structure of arteries and veins.
- b. Description of heart and blood vessels with their course and branches.
- c. Pericardium with applied aspect.

7. Lymphatic system

Definition, types and structure of lymph vessels, lymph glands with their clinical aspect.

8. Myology

- a) Structure and types of muscles.
- b) Description of muscles; their origin, insertion, actions, nerve supply and clinical anatomy.

Paper II

100 marks

Part A

50 marks

1. Respiratory System

- a. Bronchial tree and lungs with their clinical aspects.
- b. Respiratory tract: nasal cavity, pharynx, larynx, trachea, bronchial tree.
- c. Pleura with its clinical aspects.
- d. Diaphragm.

2. Digestive system

- a. Organs of digestive tract (alimentary tract) with their clinical aspects.
- b. Digestive glands: liver, spleen and pancreas.
- c. Description of peritoneum with its clinical aspects.

3. Urinary System

Urinary tract: kidney, ureter, urinary bladder and urethra with their clinical aspects.

4. Reproductive system

- a. Male Reproductive system: reproductive organs, tract and glands (prostate and seminal vesicles) with their clinical aspects.
- b. Female reproductive system: reproductive organs, tract and glands with their clinical aspects.

5. Endocrinology

Definition, classification & description of endocrine glands (pituitary, thyroid, parathyroid, thymus and suprarenal glands) with clinical aspects.

PART B

50 marks

6. Nervous System

Nervous system: definition, classification and its importance. Description of brain and spinal cord.

Description of peripheral nervous system: cranial and spinal nerves, nerve plexuses, and autonomic nervous system, formation and circulation of cerebrospinal fluid and blood supply of brain and spinal cord.

7. Sensory organs

Description of structures of eye, ear, nose, tongue and skin with their clinical aspects.

8. Surface and radiological anatomy

- a. Study of radio-imaging of limbs, abdomen, pelvis and vertebral column with its clinical application.
- b. Surface anatomy of thoracic and abdominal viscera.

PRACTICAL

100 marks

Teaching hours: 180

Content of practical

1. Practical study of bones
2. Practical study of organs
3. Practical study of surface and radiological anatomy.
4. Shava vichhedana – detailed dissection of the whole body.
5. Practical study of location of marma
6. Demonstration of histology slides (10 slides)

Distribution of marks

- | | |
|--|----------|
| 1. Spotting - | 20 marks |
| 2. Dissected organs and histology slides - | 20 Marks |
| 3. Bones, joints, marma - | 20 Marks |
| 4. Surface & radiological anatomy - | 10 Marks |
| 5. Practical records - | 10 Marks |
| 6. Viva-Voce - | 20 Marks |

Total

100 Marks

Reference Books :-

S. No.	Name of Book	Author
1.	Brihat Shariram Vaidyaratna-	P.S. Varrier
2.	Abhinava Shariram-	Acharya Damodar Sharma Gaur
3.	Manava Sharir (Revised Edition)-	Prof. Dinkar Govind Thatte
4.	Manava Bhruna Vigyana -	Prof. Dinkar Govind Thatte
5.	Manava Anga Rekhankan Vikrian -	Prof. Dinkar Govind Thatte
6.	Sharir Rachana Vigyan (English)-	Vaidya P.G. Athawale
7.	Manual of Practical Anatomy Cunnigham	Practical Manual Vol-1, Vol-2, Vol-3
8.	Clinical Anatomy in Ayurveda -	Prof. D.G. Thatte & Prof. Suresh Chandra
9.	Sharir Rachna Vigyan (English)-	Prof. D.G. Thatte
10.	Ayurvedic Human Anatomy -	Prof. Dr. Giridhar M. Kanthi
11.	Regional Anatomy -	B. D. Chaurasia
12.	Rachana Sharir Vigyana -	Dr. Mahendra Sing
13.	elevant chapters of Brihtrayee and Laghuthrayee	
14.	Gray's Anatomy	
15.	Text Book of Human Anatomy-	Inderbir Singh
16.	Clinical Anatomy-	Richard S Snell
17.	Fundamentals of Human Anatomoy-	Dr. Chakraborty
18.	Human Osteology -	Poddar

1.5 Maulik Siddhant avum Ashtang Hridaya
(Basic Principles and Ashtang Hridaya- An ancient text of Ayurveda)

Theory- One Paper- 100 marks
Teaching Hours -120 hours

Part A

60 marks

Ashtang Hridaya Sutrasthana Adhyaya 1 to 15

Part B

40 marks

1. Ashtang Hridaya Sutrasthana Adhyaya 16 to 30
2. Description of Ashta Prakriti
3. Shastra Lakshan (Tantra), Tantraguna, Tantradosha, Tachitalya, Arthasraya, Kalpana

Reference Books:

1. Astang Hridaya : Hindi commentary by Lalchanda Vaidya
2. Astang Hridaya : Hindi commentary by Vd. B.L. Gaur
3. Astang Hridaya : English commentary by Dr. T. Sreekumar
4. Astang Hridaya : English commentary by Dr. Vishwavasu Gaur
5. Astang Hridaya : Sanskrit commentary by Hemadri
6. Astang Hridaya : Sanskrit commentary by Arunadatta

CENTRAL COUNCIL OF INDIAN MEDICINE
NEW DELHI

SYLLABUS OF AYURVEDACHARYA (BAMS) COURSE

INDEX

2ND PROFESSIONAL

1.1	DRAVYAGUNA VIGHYAN	2-9
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2.1 DRAVYAGUNA VIGYAN
(PHARMACOLOGY & MATERIA MEDICA)

Lectures: 200 Hrs.

Practicals: 200 Hrs.

Total Marks -400

Theory Two Papers– 100 Marks Each

Practical/Viva voce – 200 Marks

Paper I

100 Marks

Part A

50 Marks

1- Dravyaguna Shastra Paribhasa- Lakshana of Sapta Padartha of Dravyaguna Vijnana viz Dravya- Rasa-Guna- Virya- Vipaka- Prabhava and Karma.

2- Dravya:

Etymological derivation, definition, panchbhoutikatwa.

Classification of Dravya according to Samhitas and Nighantus Taxonomical classification.

3- Guna:

Etymological derivation, definition and Classification of Guna.

Detailed knowledge of Gurvadi Guna & Paradi gunas.

4- Rasa:

Etymological derivation, definition, Meaning of "Rasa" in various contexts. Shad Rasas (Madhura, Amla, Lavana, Katu, Tikta, and Kashaya), Panchabhautik constitution of Rasas, Nirvrittivisheshakrama (manifestation in general and particular), Ritu and shad rasa Rasanurasayoh bheda (Difference between rasa and anurasa), Lakshana (characteristics),Guna and Karma of shad Rasas, Kopana and Shamana of Dosha and dushya by Shad rasas. Effects of excess usage of Rasa. Rasopalabdhi, Rasaskandha.

5- Vipaka:

Etymological derivation and definition, difference between Avasthapaka and Vipaka, Types of Vipaka, (Dvidha-Trividha,Panchavidha) Guna and karma of Vipaka.

Grades of Vipaka (taratamya), Vipakopalabdhi hetu (Factors to determineVipaka).

6- Veerya:

Etymological derivation, definition and Swarupa of Virya, Number of Virya.

(Dvidha & Ashtavidha), Panchabhauthikatva

Virya karmani (Effects of Virya), General principles in determination of virya along with exceptions.

7- Prabhava:

Definition, Effects of Prabhava.

8- Interrelation of Rasa-Guna-Virya-Vipaka-Prabhava with respect to their strength (balabal nirupana). Samanapratyayarabdha and Vichitrapratyayarabdha dravyas.

9- Karma:

Lakshana, swarupa and bheda of karma (Definition, nature and types of action).

Explanation of the following Karmas with examples:

- | | | |
|-----------------|----------------|-----------------|
| 1. Deepana | 2. Pachana | 3. Samshodhana |
| 4. Samshamana | 5. Anulomana | 6. Sransana |
| 7. Bhedana | 8. Rechana | 9. Chhedana |
| 10. Lekhana | 11. Grahi | 12. Sthambhana |
| 13. Madakari | 14. Pramathi | 15. Abhishyandi |
| 16. Vyavayi | 17. Vikashi | 18. Rasayana |
| 19. Vajeekarana | 20. Jeevaneeya | 21. Balya |
| 22. Brimhana | 23. Langhana | 24. Medhya |

10. Brief information on Karmas of dashemani gana of Charak Samhita.

11- Mishraka Gana:

11a)- Audbhida Gana (Vegetable origin) Brihatpanchamoola, Laghupanchamoola, Vallipanchamoola, Kantakapanchamoola, Trinapanchamoola, Madhyamapanchamoola, Jeevaneeya panchamoola, Panchapallava, Panchavalakala, Triphala, Trikatu, Trimada, Chaturusana, Panchakola, Shadusana, Chaturbeeja, Jeevaniya gana, Ashtavarga, Trijataka, Chaturajataka, Katuchaturjataka Panchatikta, Amlapanchaka, Chaturbhadra, Trikarshika, Swalpatriphala, Madhuratriphala, Mahavisha, Upavisha, Agrya aushadh varga- Knowledge of Agrayaushadha Varga with example.

11 b)- Jangama Gana (Animal origin)- Ksheerashtaka, Mutrashtaka, Pitta panchaka.

11 c)- Parthiva Gana (Mineral origin) - Lavana Panchaka, Kshara dvaya, Kshara Ashtaka.

12- Basis of nomenclature:

Basis of nomenclature of dravya, Basis and Derivation of synonyms.

13. Bheashaja Pariksha vidhi (as described in Charaka samhita vimana sthana 8), Dravya Sangrahana (collection of dravya)- Ecology- Classification of desha (geographical area) and bhumi (soil), swarupa of sangrahaniya dravya of (Nature and quality of drug to be collected). Sangrahana vidhi (Method of collection) -Vegetable and Animal origin drugs according to part used. Period of collection according to virya, samrakshana vidhi (preservation of collected dravyas), bheshajagara (Storehouse), study on different prayojyanga (useful plant parts).

Part B**50 Marks****(I)****20 Marks**

14 a) Concept of dravya shodhan (purification of dravya).

14 b) Brief knowledge of Apamishran (adulterants)

14 c) Concept of Abhava pratinidhi dravya (substitutes)

15- Prashasta bhesaja (ideal drug), plant extracts. Concept of viruddha Dravya (incompatibility of the dravya).

16- Introduction to Nighantu Vigyan - Dhanwantari Nighantu, Bhavaprakashanighantu, Rajanighantu.

17- Brief knowledge of cultivation, conservation of medicinal plants and information about endangered species.

(II)**30 Marks**

18. - Introduction, Definition & scope of Pharmacology and Principles of general Pharmacology. Brief Knowledge about pharmacology of the following - Anaesthetics, CNS depressants, Sedatives, Hypnotics, Tranquilisers, Antipyretics, Analgesics, Antiepileptics, Antihypertensive, Antianginal, Antiplatelet, Hypolipidaemic, Haemopoetic, Coagulants, Bronchodilators, Aerosols/ Inhalants, Expectorants, Digestants, Carminatives, Antacids, Antiulcer, Laxatives, Antidiarrhoeals, Antiemetic, Hepatoprotective, Diuretic, Antidiuretic, Lithotriptic, Antiinflammatory, Hormonal therapy, Antiobesity, Antidiabetic, Antithyroid, Oxytocic. Galactagogues, Contraceptives, Styptics, Antihistamines, Antimicrobial, Antibiotics, Antimalarial, Amoebicidal, Antifilarial, Anthelmintic, Antifungal, Vitamins, Minerals, Water imbalance and IV fluids, Vaccines, antivenom, antirabies serum, Local anti septics, drugs in ophthalmic practice, Anti cancer drugs and immunomodulators.

Paper II**100 Marks****Part A****70 marks****1-Detailed Knowledge of Following Dravya –**

- 1- Detailed knowledge of following drugs with respect to Basonym of drug, Main Synonyms, Regional Name, Botanical Name, Family, Classification of Dravya (Gana) as described in Charak and Sushrut, External morphology, Useful parts, Important phytoconstituents, Rasa panchaka, Action on Dosha, Dhatu, Mala, Prayogarha vyadhi (therapeutic indications), Amayikaprayoga and Matra (Therapeutic administration and Dose), Vishishta yoga (names of important formulations), Vishakta Lakshan (adverse effects), Chikitsopachara (remedial measures) and Shodhana (as required)

[Alphabetical order and Botanical names to all the drugs are to be added]

Agaru	Guggulu	Pashanabheda
Agnimantha	Haridradvaya	Patala
Agnimantha	Haritaki	Pippali-Pippalimula
Ahiphena	Hingu	Prishniparni
Amalaki	Jambu	Punarnava
Apamarga	Jatamansi	Pushkarmoola
Aragvadha	Jatiphal	Rasna
Aragvadha	Jeerakadvaya	Rasona
Ardra-Sunti	Jyotishmati	Rohitaka
Arjuna	Kalamegha	Saireyaka
Arjuna	Kampillaka	Sarivadvaya
Arkadvaya	Kanchanara	Sarpagandha
Ashvagandha	Kantakari	Shalaparni
Asoka	Kapikacchu	Shallaki
Ativisha	Karkatakshringi	Shalmali
Bakuchi	Karpura	Shankhapushpi
Baladvayam.	Katuki	Shatavari
Bhallataka	Khadira	Shigru
Bharangi	Kiratatikta	Shirisha
Bhrungaraj	Kumari	Shyonaka
Bibhitaka	Kumkum Kesara	Talisa Patra
Bijak/ Vijaysar	Kupilu	Tila
Bilva	Kushta	Trivrut
Brahmi	Kutaja	Tulasi
Bruhati	Lavanga	Tvak
Chandanadvaya,	Lodhra	Ushira
Chitraka	Madanaphala	Vacha
Dadima	Mandukaparni.	Varahi
Devadaru	Manjishtha	Varahi
Dhataki	Maricha	Varuna
Durva	Musta	Vasa
Eladvayam	Nagakeshara	Vatsanabha
Eranda	Nimba	Vidanga
Gambhari	Nirgundi	Vidari
Gokshura	Palasha	Yastimadhu
Guduchi	Parpata	Yavani

Part B-

II- Brief Knowledge of following dravyas with Respect to Sanskrit Name, Botanical Name, Family, Habit (Samanya Swarupa), Parts Used and Indications.

Agastya	Jati	Palandu
Ajamoda	Jayapala	Parasika Yavani
Akarkarabh	Jeevanti	Parijata
Amlavetasa	Kadali,	Parisha
Amra	Kadamba	Parnabija

Amragandhiharidra	Kaidarya	Parnayavani
Ankola	Kakamachi	Parpataka
Aparajita	Kamala	Parushaka
Ashvagol	Kankola	Patalagarudi
Ashvattha	Karanja	Patha
Asthishrunkhala	Karavellaka	Patola
Atasi	Karavira	Patranga
Avartaki	Karira	Pilu
Avartani	Karpasa	Plaksha
Babbula	Kasamarda	Prasarani
Badara	Kasha	Priyala
Bakula	Kasni	Priyangu
Bhumyamalki	Kataka	Puga
Bijapooru	Katphala	Putiha
Bola	Kebuka	Putranjivaka
Chakramarda	Kharjura	Rajika/Sarshapa
Champaka	Kitmari	Rohitaka
Chandrashura	Kokilaksha	Saptachakra
Changeri	Koshataki	Saptaparna
Chavya	Kulatha	Saral
Chirbilva	Kumuda	Sarja
Chopachini	Kusha	Shala
Danti	Kusmanda	Shara
Darbha	Lajjalu	Sharapunkha
Dattura	Langali	Shatahwa
Dhanvayasa	Latakaranja	Shati
Dhanyaka	Latakasturi	Snuhi
Draksha	Madayantika	Sringataka
Dronapushpi	Mahanimba	Svarnakshiri
Gandhaprasarini	Mandukaparni	Tagara .
Garjara	Markandika	Tailaparni
Gojihva,	Masha	Talmuli
Gorakshaganja	Mashaparni	Taruni
Gunja	Matulunga	Tavakshira
hinsapa	Mayaphala	Teja Patra
Hinstra	Meshashrunji	Tuvaraka
Hribera	Methika	Udumbara
Hrutpatri	Mudgaparni	urana
Ikshu	Mulaka	Vamsha
Indravaruni	Murva	Vata
Ingudi	Nagabala	Vatada
Irimesa	Nala	Vrudhadaru
Ishvaku	Narikela	Vrukshamla
Isvari	Nili	
Japa	Padmaka	

III .-Introduction, Guna, Karma and Uses of following Jantava Dravya (Drugs of Animal Origin).

1. Kasturi

2. Goroohana

3. Mrigasringa

IV- Introductory Knowledge of Following Annapana Varga:

- | | | |
|----------------|---------------------|----------------------|
| 1. Jala Varga | 2. Dugdha Varga | 3. Madhu Varga |
| 4. Taila Varga | 5. Sukadhanya Varga | 6. Shamidhanya Varga |
| 7. Phala Varga | 8. Shaka Varga | 9. Mamsa Varga |
| 10. Aharayogi | | |

PRACTICALS

1. A. Study of Macroscopic, Microscopic characters and Demonstration of organoleptic characteristics and grahya-agrahyatva of following plants and their useful parts.
 - i. Kanda (stem) - Guduchi or Ashtishrinkhala
 - ii. Patra (leaves) - Vasa or Kumari
 - iii. Pushpa (flower and Parts of flower)- Dhataki or Japa
 - iv. Phala (fruit) – Maricha or Madanaphala or Vidanga
 - v. Beeja (seeds) – Eranda or Kapikacchhu
 - vi. Twak (bark) – Kutaja or Arjuna or Ashwattha
 - vii. Moola(Root)- Punarnava or Chitraka
 - viii. Nirayasa (exudate) – Guggulu or Mocharasa
 - ix. Jangama dravya - Madhu or Ghrita.
2. Records of Herbarium sheets of 50 medicinal plants Compulsory study tour other state/s for field knowledge and procurement of plant species.

PRACTICAL MARKS DIVISION

1	Herbarium	20 Marks
2	Practical record	20 Marks
3	Drug identification- spotting –Raw/crude drugs	30 marks
4	Plant identification spotting –fresh	30 marks
5	Practical	40 marks
6.	Viva-Voce	60 Marks
Total		200 marks

Reference Books

- | | | | |
|-----|---|---|--|
| 1. | Abhinav Buti Darpan (Vol.1-2) | - | Vd. Roop Lal Vaishya |
| 2. | Aushadna Vigyana Shastra | - | Acharya Pt. Vishvanatha Dwidevi |
| 3. | Ayurvediya Aushadnkarma vigyana | - | Acharya V.J. Thakur |
| 4. | Bedi Vanaspati Kosha | - | Prof. Ramesh Bedi |
| 5. | Bhaishajyaguna Vigyana | - | Dr. Alakhnarayan Singh |
| 6. | Bhav Prakash Nigantu (English) | - | Shreekanthamurti |
| 7. | Bhav Prakash Nighantu | - | With Vd. Krishna Chandra
Chunekar commentary |
| 8. | Bhrinad dravyagunadarsha | - | Mahendra Kumar Shastri |
| 9. | Classical Uses of Medicinal Plants | - | Acharya Priyavrata Sharma |
| 10. | Controversial Medicinal Plants | - | Vd. G. Bapa Lal |
| 11. | Dalhana Ka Dravyaguna Shastra Ke
Kshetra Me Yogadana | - | Vd. Shiv Kumar Vyas |
| 12. | Dravyaguna Kosha | - | Acharya Priyavrata Sharma |
| 13. | Dravyaguna Sutram | - | Acharya Priyavrata Sharma |
| 14. | Dravyaguna Vigyana | - | Dr. Gyanendra Pandey |
| 15. | Dravyaguna Vigyana(Vol. 1-2) | - | Acharya Yadavji Tikram Ji |
| 16. | Dravyaguna Vijyana | - | Dr. V.M. Gogate |
| 17. | Dravyaguna Vigyana (Vol. 1-5) | - | Acharya Priyavrata Sharma |
| 18. | Dravyaguna Shastrum | - | Vaidya G.A. Phadake |
| 19. | Dravyaguna Vijyana | - | Dr. A.P. Deshpande |
| 20. | Dravyagunavijnana basic Principles | - | Prof.D.S.Lucas |
| 21. | Forgotten Healers (Indian Medicinal
Plants) | - | Dr. Prakash Pranjape |
| 22. | Glossry of Vegetable Drugs in
Bhritrtrayis | - | Thakur Balwant Singh & Vd.
Krishna Chandra Chunekar |
| 23. | Introduction to Dravyaguna | - | Acharya Priyavrata Sharma |
| 24. | Kriyatamka Aushadi Parichaya | - | Acharya Pt. Vishvanath Dwidevi |
| 25. | Materia Medica | - | Acharya Ghosh |
| 26. | Nighantu Adarsh (Vol. 1-2) | - | Vd. Bapa Lal |
| 27. | Pharmacological basis of Medical
Practice | - | Goodman & Gillman |
| 28. | Pharmacology and
Pharmacotherapeutics | - | Satoskar Bhandarkar & Ainapure |
| 29. | Prayogatamaka Dravyaguna Vigyana | - | Dr. Maya Ram Uniyal |
| 30. | Priya nighantu | - | Acharya Priyavrata Sharma |
| 31. | Raspanchaka/Dravyaguna Siddhanta | - | Prof. Shivcharan Dhyani |
| 32. | System of Plant Nomenclature in
Ayurveda | - | Dr. Gyanendra Panday |
| 33. | Text Book of Pharmacognosy | - | Trees & Valis |
| 34. | Textbook of Dravyaguna | - | Dr.K.Nishteswar |
| 35. | Unani Dravyaguna Vigyana | - | Hakim Daljeet Singh |

36. Useful parts of Charaka, Sushrut, and Vagbhata. -
37. Uttarakand Ki Vanaspatiya - Dr. Gyanendra Pandey
38. Vanoaushadi Darshika - Thakur Balwant Singh
39. Vanoaushadi Nidarshika - Dr. Ram Sushil Singh
40. Vedic Vanaspatiyam - Dr. Dinesh Chandra Sharma

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2.2 ROGA NIDANA

**Theory Two Papers – 100 Marks Each
Practical/Viva voce – 100 Marks**

PAPER -1

100 Marks

Part A

50 Marks

I. Dosha Dushyadi Vigyan

1. Definition and importance of Roganidana.
2. Samanya Nidana and Samanya Lakshana of Dosha Vriddhi, Kshaya and Prakopa.
3. Dosha Dhatu Ashraya Ashrayi Bhava.
4. Dhatu Kshaya Vriddhi Lakshana.
6. Mala Kshaya Vriddhi Lakshana.
7. Hetu, Bheda and Lakshana of Agni Dushti.
8. Definitions and Samanya Lakshana of Ama.
9. Sama and nirama Dosha, Dushya Lakshana.
10. Dosha Paka and Dhatu Paka Lakshana.
11. Concept, classification, diagnosis and general complications of Avarana.
12. Doshagati and Rogmarga.
13. Detailed study of Srotomoola and Srotodushti Samanya and Vishishta Hetu Lakshana of all Srotas. Differences between Sroto Dushti and Kha Vaigunya.

II. Vyadhi Vigyan

1. Definition, synonyms and classification of Vyadhi & Vyadhi Ghatak.
2. Criteria for nomenclature of Diseases in Ayurveda (Vyadhinamakarana).
3. Bija, Bija Bhaga and Bija Bhaga Avayava Dushti.
4. Basic knowledge of Hereditary, Congenital, Acquired, Multifactorial, Traumatic and Environmental disorders.
5. Introduction to ICD Classification of Diseases of WHO and DSM classification.
6. Samanyaja and Nanatmaja Vikara. NidanarthakaraVyadhi, Hetu Sankara, Lingasankara, Vyadhisankara, Vyadhi Awastha.
7. Dhatu, Updhatu, Mala and Indriya Pradoshaj Vikara.
8. Concept of AshtaMahagada .
9. Introduction to Ashta Nindita.
10. Definition and classification of Vyadhikshamatva.
11. Ojas – types of Ojo Dushti- Virimsa- Vyapad & It's Diseases.

III. Basic Pathology

1. Introduction to pathology and its sub-divisions.
2. Introduction to Cell Injury and Cellular adaptations.
3. Definition and brief description of inflammation – Healing/repair.
4. Definition and brief description of edema – shock – hemorrhage, Thrombosis , embolism, Ischemia and Infarction.
5. Types of Immunity – different types of immune responses in the body – Basic knowledge of auto immune diseases, Acquired immune deficiency disease and hypersensitivity.
6. Nomenclature and classification of tumors - difference between benign and malignant tumors.
7. Introduction to Nutritional disorders – disorders of macro and micro nutrients.
8. Introduction to infections.

9. Introduction and classification of microorganisms such as virus- bacteria-fungus.

Part B

50 Marks

IV. Nidana Panchaka Vigyana

1. Difference between Roga and Rogi Pariksha.
2. Importance of Nidan Panchaka.
3. Hetu - Definition, Synonyms and Classification.
4. Purva Rupa – Definition, Synonyms, Samanya and Vishishta Purvarupa.
5. Rupa - Definition, Synonyms, Samanya and Pratyatma Lakshana. Difference between Vyadhi and Lakshana.
6. Upashaya / Anupashaya– Definition, Types and its importance in diagnosis.
7. Samprapti – Definition, Synonyms and Type and Samprapti Ghataka.
8. Shat Kriyakaala. Relationship between Nidana Panchaka and Shat Kriyakaala.
9. Upadrava and Udarka.
10. ArishtaVigyan – Definition, Types and its importance.
11. Sadhyasadhyatwa – Types, their parameters and importance.
12. General diagnostic principles of AnuktaVyadhi (Ch. Vi. 4).

V. Pariksha Vigyana

1. Importance and knowledge of Aptopadeshadi & Darshanadi Trividha, Chaturvidha, and Shadvidha Pariksha.
2. Importance and Knowledge of Ashtasthana Pariksha.
3. Importance and Knowledge of Karanadi Dashavidha Parikshya Bhava.
4. Importance and Knowledge of Dashavidha Pariksha.
5. Basic knowledge of ECG, USG, X Ray, CT Scan, MRI.

Paper II

100 Marks

Part A

50 Marks

Systematic study of Nidana Panchaka of following diseases (Including Upadrava, Arishta and Sadhyasadhyata).

I. Diseases of Rasavaha Srotas

- 1(a) Jwara(Jwarabheda-Ama, Pachyamana and Nirama Jwara,Agantukajwara, Punaravartaka Jwara,Vishama Jwara, Dhatugata Jwara, Charakokta Sannipata Jwara.
- 1(b) General mechanism of Fever, Introduction to the Aetiopathogenesis of Malaria,Typhoid, Dengue fever, Influenza and Chikungunya.
- 2(a) Pandu, Amavata, Hridroga, Shotha.
- 2(b) Introduction to Anaemia & its Classification, Rheumatic fever, Rheumatoid Arthritis, Hypertension, Angina, Ischaemic Heart Disease, Myocardial Infarction and CCF.

II. Diseases of Raktavaha Srotas

1. Kamala - Raktapitta - Vatarakta – Kroshtuksheersha - Shitapitta – Maha Kushtha – Visarpa – Shwitra and Introduction to Kshudra Kushtha.
2. Introduction to Hepatomegaly, Spleenomegaly, Leukaemia, Thalessemia, Sickle cell Anaemia.
3. Introduction to Urticaria, Psoriasis, Eczema, Pemphigus.

III. Diseases of Mamsavaha Srotas

- (a) Galganda
- (b) Introduction to Thyroid disorders

IV. Diseases of Medovaha Srotas

1. Sthoulya - Karshya – Prameha.
2. Introduction to Obesity and Diabetes Mellitus.

V. Diseases of Asthi – Majjavaha Srotas

1. Vatavyadhi - Akshepaka - Apatanaka - Ardita - Pakshaghata – Gridhrasi –Vishwachi, Avabahuka, - Manyasthambha ,Katigraha,Pangutwa
2. Sandhigatavata, Asthi-Majjagata vata.
3. Introduction to Osteo- Arthritis, Osteoporosis.
4. Introduction to Parkinson’s disease, Stroke, Lumbago- Sciatica syndrome, Bell’s Palsy, Cervical- Lumber & Ankylosing Spondylitis.

VI. Diseases of Shukravaha Srotas

1. Introduction to Klaibya and Vandhyatva.
2. Introduction to male and female infertility.

Part B

50 Marks

VII. Diseases of Pranavaha Srotas

- 1(a). Kasa - Shwasa - Hikka – Urahkshata – Shosha – Rajayakshma.
- 1(b). Introduction to the aetiopathogenesis of Pneumonia, Pleural effusion, Bronchitis, Bronchiectasis, Bronchial Asthma.

VIII. Diseases of Annavaha- PureeshavahaSrotas

1. Agnimandya - Ajirna - Aruchi- Chhardi - Amlapitta- Shoola – Parinama Shoola – AnnadravaShoola- Atisara – Pravahika - Grahani –Gulma- Udara Roga.
2. Introduction to Anaha, Adhmana, Atopa, Visuchika Alasaka, Vilambika.
3. Introduction to Peptic Ulcer, Irritable Bowel Syndrome (IBS) Diarrhoea, Dysentery, Constipation, Inflammatory Bowel Diseases.

IX. Diseases of Udakavaha Srotas

- 1(a) Introduction to Trishna, Daha.
- 1(b) Introduction to water and electrolyte imbalance disorders.

X. Diseases of Mutravaha Srotas

- 1(a) Mutrakrichha – Mutraghata.
- 1(b) Introduction to Urinary Tract Infection, Nephropathies.

XI. Diseases of Swedavaha Srotas

- 1(a) Introduction to Khalitya, Palitya.

XII. Diseases of Manovaha Srotas

- 1(a) Apasmara, Unmada, Atatwabhinivesha-Vishada, Anidra, Mada, Murchha, Sanyasa.
- 1(b) Introduction to Epilepsy, Depression, Anxiety neurosis.

XIII. Upasargjanya Vyadhi (Communicable diseases)

- 1(a) Romantika – Masurika – Upadamsha – Phiranga.
- 1(b) Introduction to Measels, Chickenpox, Leprosy, Tuberculosis and AIDS.

XIV. Krimi Vigyana

- 1) Definition, classification of Krimi and features of Krimiroga
- 2) Snayuka, Shleepada.
- 3) Introduction of Filariasis and classification of common parasites.

PRACTICAL

(100 Marks)

i) Fundamental Principles of Laboratory Tests

Introduction to laboratory, Sterilization, glass wares, solutions reagents and safety procedures, Disposal of biomedical wastes.

ii) Haematology

- 1 Haemoglobin estimation.
- 2 Blood cells counting - WBC, RBC, platelets.
- 3 Hematocrit /Packed cell volume (PCV).
- 4 Erythrocyte indices - MCV, MCH, MCHC.
- 5 Peripheral blood smear, staining technique and differential leucocyte count.
- 6 Peripheral blood film examination in Anemia, Leukemia, Malaria, Filariasis (Demonstration).
- 7 ESR.
- 8 Screening test for bleeding disorders- bleeding time (BT), Clotting time (CT), Demonstration of Prothrombin time (PT).
- 9 Blood grouping - ABO system, Rh typing (Rhesus system).

iii) Urine Examination

1. Ayurveda anusara mutrapariksha.
2. Physical Examination - Volume, Reaction (Ph) & Specific Gravity.
3. Chemical Examination for - Proteins, Glucose, Phosphate, Ketone, Bile salts, Bile pigment.
4. Dipstick examination
5. Demonstration of Microscopic Examination.

iv) Stool Examination

- 1 Ayurveda anusara purishapariksha.
- 2 Physical examination, Sama-Nirama Pariksha.
- 3 Microscopic examination of ova & cyst (Demonstration)
- 4 Occult Blood Test.

v) Demonstration of Sputum Examination

- 1 Ayurveda anusara sthivanapariksha.
- 2 Physical, Chemical and Microscopic Examination of the sputum.
- 3 Sample collection and Demonstration of AFB.

vi) Demonstration of Semen examination

- 1 Ayurveda anusara Retaspariksha.
- 2 Semen examination.

vii) Biochemical Examination – (Demonstration)

Blood Glucose, Serum Bilirubin, Blood Urea, Lipid Profile, Serum Creatinine, Serum Uric acid etc.

viii) Demonstration of different staining techniques in microbiology.

ix) Demonstration of Sero-immunological Investigations: RA and Widal.

x) Laboratory record – maintenance of laboratory record book.

Bed side Practical (Clinical Methods)

1. Introduction and demonstration of clinical methods (General and Systemic Examination).
2. Practical demonstration of examination of Roga based on Pancha Nidana.
3. Demonstration of instruments used for clinical examination.
4. Practical records of clinical examination of at least 20 long cases in I.P.D including Aturbala-pramana pareeksha.
5. Practical records of clinical examination of at least 20 short Cases based on Ashta vidha pariksha in O.P.D.

6. Demonstration of ECG, USG and Radio imaging techniques.

Distribution of Marks for final Practical Examination

1. Daily Record -10 Marks
2. Identification of Instruments -10 Marks
3. Laboratory Experiments -20 Marks
4. Short Case -10 Marks
5. Long Case -20 Marks
6. Viva - Voce -30 Marks

Total 100 Marks

Reference Books

1. Madhava Nidana (Madhukosha Pt. Yadunandan Upadhyay Commentary) Part 1 – 2
2. Doshakaranatwa Mimamsa - Acharya P.V. Sharma
3. Nadi Darshan - Vd. Tara Shankar Mishra
4. Nadi Vigyana Vidyotini Hindi Tika
5. Nadi Vigyan- Shri Satya Dev Vashisht
6. Nadi Vigyan- Gangadhar Tika
7. Rogi Pariksha vidhi Acharya- Priyavrata Sharma
8. Ayurvediya Roga Vargikaran- Vd. Ramanath Dwivedi & Vd. Gurdip Singh.
9. Ayurvediya Nidan Evum Chikitsa Ke Siddhanta - Prof. Ram Harsh Singh.
10. Relevant portions of Charak Samhita, Sushrut Samhita and Vagbhata.
11. Text Book of Pathology- William Boyds.
12. Text Book of Pathology- Harsh Mohan.
13. Text Book of Pathology- Dey and Dey.
14. Text Book of Parasitology -Ramnik Sood.
15. Clinical Pathology and Bacteriology- S.P. Gupta.
16. Clinical methods in Ayurveda- K. R . S. Murthy.
17. Parameswarappa's Ayurvediya Vikriti Vigyan and Roga Vikriti Vigyan-Dr. P.S. Byadgi.
18. Oxford Handbook of Clinical Examination Oxford Handbooks and Practical Skills.
19. Advanced Clinical Evaluation System for Practical Assessment of Clinical Examination Skills.
20. Symptoms & Signs in Clinical Medicine - Chamberlains.
21. Clinical Methods- Hutchison's.
22. Bedside Clinics in Medicine Part- I & II-Kundu.
23. Common Medical Symptoms- Mehta.
24. Advances in Pathology & Lab Med- Weimstean, Gralem, Anderson, Cortan, Wick, Zumwelt.
25. Clinical Laboratory medicine Edited by Kenneth D Mc. Chately.
26. General Pathology- Walter & Israel Churchill Living stone.
27. A Comprehensive Dictionary of Pathology- Chris Newann.
28. Practical Pathology- Dr. K. Uma Chaturvedi.
29. Clinical examination- Douglas/Macleod's.
30. Pathology Practical book for Undergraduates- Harsh Mohan.
31. Medical Laboratory Technology - R. Sood.
32. Clinical Diagnosis and Management by Todd, Sanford and Davidson Laboratory methods
33. Clinical Hematology In Medical Practice- Degruchy's.
34. Robbins Basic Pathology- Kumar, Abbas, Fausto et al.

2.3. Rasashastra Evam Bhaishajyakalpana

(IATROCHEMISTRY AND AYURVEDIC PHARMACEUTICS)

Theory -Two Papers

Total Marks- 200

Teaching hours-200

Practical :-

Total Marks-200

Teaching hours-200

RASASHASTRA

Paper 1

100 Marks

Part A

50 Marks

1. Definition and etymology of Rasa, History of Rasashastra, Importance of Rasaushadhi, Concept of Rasa-Rasayana, Concept of Raseshwar Darshana. Concept of Rasashala and Rasamandap.
2. Brief Description and Application of Technical terminologies (Paribhasha): Avapa, Nirvapa, Dhalana, Bhavana, Jarana, Murchana, Shodhana, Marana, Amrutikarana, Lohitikarana, Mruta Loha, Satwa Patana, Druti, Apunarbhava, Niruttha, Rekhapurna, Varitara.
3. Dravya Varga: Amlavarga, Panchamrittika, Panchagavya, Panchamrita, Ksharashtaka, Dravakagana, Mitra panchaka, Rakta varga, Lavanapanchaka.
4. Brief description of Yantras and their application Ulukhala Yantra, Khalwa Yantra, Kachhapa Yantra, Damaru Yantra - Vidhyadhara Yantra- Urdhwapatan, Addhapatan & Tiryakpatana Yantra, Jaranartha Tulayantra, Dolayantra, Patalayantra, Palika Yantra, Baluka Yantra, Bhudhara Yantra, Sthali Yantra, Swedana Yantra.
5. Brief description & application of Musha (Crucible): Samanya Musha, Gostani musha, Vajra Musha, Maha musha, Yoga musha, Vrintaka Musha, Malla / Pakwa musha. Different types of crucibles e.g. Silica crucible, platinum crucible. Mudra and Sandhi Bandhana.
6. Brief description & applications of Chullika, Satwapatana Koshti, Patala Koshti, Gara Koshti, Angarakoshti and knowledge of various heating appliances viz. Gas stove, Hot plate, Heating mantle, Induction Stove, Hot Air Oven.
7. Concept, definition and types of Puta: Suryaputa, Chandraputa, Gomayaputa, Lawakaputa, Kukkutaputa, Kapotaputa, Varahaputa, Gajaputa, Mahaputa, Kumbhaputa, Valukaputa, Bhudharaputa, Applications of Electric muffle furnace and fuel (diesel) dependent furnace. Brief introduction to thermocouple and pyrometer.
8. Knowledge of Parada: Synonyms, Occurrence, natural and artificial sources of Parada, Hingulottha parada, Types of Parada, Parada Dosha: Naisargika, Yougika, Aupadhika

(Kanchuka). Grahya-Agrahya Parada, Parada gati, Parada bandha, Shodhana of Parada. Parada sanskara and brief description of Ashtasamskara.

9. Concept of Murchhana and Jarana of Parada, Preparation of Kajjali, Classification of Rasaushadhi: Khalvi rasa e.g. Tribhuvana Keerti Rasa, Parpati Rasa- Rasa Parpati, Kupipakva Rasa- Rasa sindur, Pottali rasa - Hemagarbha pottali. Rasa sevana vidhi and pathya and apathya.
10. Brief introduction of quality control , standardization and GMP of Rasaoushadhies.

Part B

50 Marks

Occurrence, Synonyms, Minerological identification, Sources, Types, Grahya and Agrahyata, Shodhana, Marana and other processing techniques. Properties, dose, anupan and therapeutic uses, pathya – apathya and ashuddha, apakwa and avidhee sevanyanya dosha and its management, important formulations of the following:

1. **Maharasa** – Abhraka (Biotite Mica), Vaikrantha, Makshika (Chalco-pyrite), Vimala (Iron Pyrite), Shilajatu, Sasyaka (Peacock ore), Chapala and Rasaka (Sphalerite).
2. **Uparasa** – Gandhaka (Sulfur), Gairika (Red Ochre), Kasisa (Green Vitriol), Kankshi (Alum), Haratala (Orpiment), Manahshila (Realgar), Anjana and Kankustha.
3. **Sadharana Rasa** – Kampillaka, Gauri pashana (Arsenic oxide), Navasadara (Ammonium chloride), Kaparda (Cowry), Agnijara, Giri Sindura (Red oxide of Hg), Hingula (Red Cinnabar) and Mriddara shringa (Litharge).
4. **Dhatu** - Swarna (Gold), Rajata (Silver), Tamra (Copper), Loha (Iron), Vanga (Tin), Naga (Lead), Yashada (Zinc), Kamsya (Bronze), Pittala (Brass), Vartaloha. Dhatu -graha sambandha.
5. **Ratna** - Manikya (Ruby), Mukta (Pearl), Pravala (Coral), Tarkshya (Emerald), Pushparaga (Topaz), Vajra (Diamond), Nilam (Sapphire), Gomeda (Zircon or Cinnamome stone), Vaidurya (Cats eye). Ratnapariksha, Ratnadosha, Ratna-graha sambandha.
6. **Uparatna**- Vaikranta (Tourmaline), Suryakanta (Sun stone), Chandrakanta (Moon stone), Rajavarta (Lapis lazuli), Perojaka (Turquoise), Sphatikamani (Quartz), Trinakanta, Palanka, Putika, Rudhir.
7. **Sudha varga** – Sudha (Lime stone), Kaparda (Cowries), Shukti (Oyster Shell) , Shankh (Conch Shell), Mriga shringa (Stag horn), Khatika, Godanti (Gypsum) and Samudraphena (Cattle Fish bone), Kukkutanda twak (Hen's Egg Shell).
8. **Sikata varga** - Sikata (Silica), Dugdhapashana (Talc), Nagapashana / Jaharmohara (Serpentine), Badarshama (silicate of lime), Vyomashma (Sangeyashab - Jade), Kousheyashma (Asbestos) and Akika (Agate).

9. Kshara varga - Sarja kshara (Sodium bicarbonate), Yava kshara, Tankana kshara (Borax), Surya Kshara (Potassium Nitrate).

10. Miscellaneous - Mandura, Bola, Dam-ul Akhawayan (Raktabandhini), Kasturi, Bhoonag, Mayurpiccha, Sarjarasa, Madhoochishta.

11. Visha and Upavisha-Introduction, collection and storage, classification, synonyms, shodhana, antidote, therapeutic and toxic doses, anupan, therapeutic uses, and formulations of following Visha and Upavisha-Vatsanabha, Kuchala, Jayapala, Dhattura, Bhanga, Bhallataka, Gunja, Arka, Snuhi. Langali, Karaveera, Ahiphena and Chitrakmool.

12. Aushadhi Yoga Gyanam- ingredients, manufacturing process, and bhesajprayogvidhi. Arogya Vardhini Gutika, Kasturibhairava Rasa, Kumara Kalyana Rasa, Garbhapala Rasa, Chandraprabha Vati, Chandramrita Rasa, Pratapalankeshwara Rasa, Pravalapanchamrita Rasa, Anandbhairava Rasa, Yogendra Rasa, Laxmivilas Rasa, Vasantakusumakara, Vasantamalati Rasa, Brihat Vata Chintamani Rasa, Shankha vati, Shwaskuthara Rasa, Hinguleswara Rasa, Hemagarbhapottali, Hridyarnava Rasa, Swarnavanga, Makaradhwaja, Putapakwavaisham Jwarantaka Loha, Vatvidhvamsan Rasa, Kamadugha Rasa, Laghusutshekhar Rasa, Navayasa Loha, Saptamrita Loha, Tamra Parpati, Panchamrita Parpati, Sveta Parpati.

13. Introduction to pharamcovigilance and its status in India, with reference to Ayurvedic drugs.

- A) Necessary to know – From part A and B : S. No. 1 to 9
B) Desired to know – From part B : S. No. 10

Practical

100 Marks

Minimum Twenty five practicals to be performed

- | | |
|-------------------------|---|
| 1. Rasa [Parada] | Samanya Shodhana of Parada
Kajjali |
| 2 Maharasa varga | Mugdha rasa
Shodhana of Abhraka
Dhanyabhraka nirmana
Shodhana of Makshika
Shodhana of Shilajatu
Shodhana of Sasyaka. |
| 3. Uparasa varga | Shodhana of Gandhaka
Shodhana of Gairika
Shodhana of Kasisa
Shodhana of Kankshi
Shodhana of Haratala
Rasa manikya nirman
Shodana of Manashila |

4. Sadharana rasa varga	Shodhana of Hingula Shodhana of Navasadar
5. Sudha Varga	Shodhana of Kapardika Shodhana of Shankha Shodhana of Shukti Shodhana of Pravala mula Shodhana of Godanti
6. Dhatu varga	Samanya Shodhana of Lauha Shodhana of Mandura Samanya Shodhana of Tamra Shodhana of Naga Shodhana of Vanga Shodhana of Yashada
7. Kshara Varga	Shodhana of Tankana
8. Parpati	Preparation of Rasaparpati, Bola Parpati and Swetaparpati
9. Visha varga	Shodhana of Vatsanabha, Bhallataka, Kupilu, Dhattura beeja, Jayapala, Gunja, Chitrakamoola.

PRACTICAL FOR DEMONSTRATION / GROUP PRACTICALS

- 1.** Hingulad rasakrishti (Hingulottha Parada).
- 2.** Bhasma: 4 (One from each group)
 - i. Abhraka bhasma, Swarna Makshika bhasma, Tamra bhasma
 - ii. Vanga bhasma, Naga bhasma, Yashada bhasma
 - iii. Mandura bhasma, Kasisa bhasma
 - iv. Shankha bhasma, Kapardika bhasma, Godanti bhasma.
- 3.** Pishti : 1 Pravala pishti, Jaharmohara / Akika pishti,
Trina kantha mani pishti, Mukta pishti.
- 4.** Druti : 1 Gandhaka druti.
- 5.** Formulations 4 (one from each group)
 - i. Rasasindura, Swarna vanga, Sameer pannaga rasa
 - ii. Saptamruta lauha, Punarnava mandura, Navayasa lauha
 - iii. Agnitundi vati, Tribhuvana kirti rasa, Sootshekhara rasa,
Laghusutashekhara Rasa
 - iv. Arogyavardhini vati, Laghumalinivasanta rasa, Hinguleshwar rasa,
Anandbhairav rasa, Rajapravartini vati

BHAISHAJYAKALPANA

Paper II

100 Marks

Part A

50 Marks

- 1. History and Chronological (kramika vikasa) development** of Bhaishajyakalpana. Concept of Aushadha and Bheshaja.
- 2. Fundamental principles of Bhaishajya Kalpana.**
- 3. Study of Ancient and Contemporary systems of 'Maana' (Units of measurement), Shushka -ardra -drava- dravya grahan niyam** (Rules of measures of dry, fresh, liquid drugs); Grahyagrahyatva, Nava Puran dravya grahan niyam.
- 4.** Guidelines and Methods of collection, storage, preservation of Aushadhi dravya. Concept of Saviryatavadhi (shelf life) and stability in ancient and contemporary science.
- 5. Bheshajprayogavidhi : Aushadha Matra, Anupana and sahapan and Aushadh sevana kaala. (Posology).**
- 6. Panchavidha kashaya kalpana and Other kalpana :** Kashaya Yoni, Swarasa, Kalka, Kwatha, Hima and Phanta, Pramathya, Aushadha siddha paniya, Tandulodaka, Laksha rasa, Mantha, Panaka, Arka, Churna, Rasakriya, Ghana, Phanita, Avaleha, Prasha, Gudapaka, Sharkara, Syrups, Ksheerapaka, Satva, Guggulu kalpana, Vati, Guti, Pinda, Modaka, Varti Preparation of Tablets, pills, capsule and Suppositories. Masi kalpana, Lavana kalpana, Kshara kalpana and Kshara sutra.
- 7. Introduction and general knowledge of useful instruments/ Equipments -** Disintegrator, Mixer, Grinder, End Runner, Edge Runner, Sieve-Shaker, Granulator, Tableting machine, Pill making machines, coating and polishing pan, capsule filling machine, sieves and mesh.
- 8. Sneha kalpana :** Sneha yoni, Types of Sneha, Sneha murchana vidhi, Sneha paka vidhi, patra paka, types and their use. Sneha siddhi lakshana, dose, Preparation and uses of Triphala Ghrita, Bramhighrita, Narayana taila, Anutaila.
- 9. Sandhana Kalpana and its types:** Madya Kalpana, Asava, Arishta, Sura (Prasanna - Kadambari - Medaka - Jagala - Bakkasa), Maireya, Surasava, Shukta, Kanjika, Sauvira, Tushodaka, Sidhu kalpana their methods of preparation, siddhi lakshana, properties, uses, doses. Takrarishta, Draksharishta, Ashokarishta, Dashamoolarishta, Kumaryasava, Chandanasava.

- 10. Kritanna and Aushadhisiddha anna Kalpana:** Definition of Kritanna, Concept of Pathya and Apathya, Yavagu –types of yavagu, Manda, Peya, Vilepi, Anna, Bhakta, Odan, Yush -types, Krishara, Mansa rasa, Vesavara, Khad Kamblika, Raga, Shadava, Dadhi and Takra Varga – Takra, Udasvita, Katvar, Mathita, Chhachika.

PART B

- 1. Bahyopacharartha kalpana (External Applications)-Lepa** -Types of Lepa, methods of preparation and mode of application. Udvartan and Avachurnan, Method of preparation of Siktha Taila, Malahara – Sarjarasa Malahara, Gandhak Malahara, Upanaha, Atasi upanaha, Shatadhouta and Sahastradhouta Ghrita. Brief introduction of semi solid dosage forms- Ointments, Creams, Emulsions, Gels, Lotions.
- 2. Principles and precautions for preparation of formulations for following:**
 - 2.1 Netraupacharartha kalpana (Ophthalmic preparations)** – Seka, Drava, Pindi, Anjana - Ashchyotana - Tarpana - Putapaka and Vidalaka, Methods of preparation of eye drops, eye ointments.
 - 2.2 Nasyopachararth Kalpana** - Classification of Nasya, Navana, Avapidana, Pradhaman, Marsha and Pratimarsha nasya.
 - 2.3 Dhumapanarth kalpana** - Classification of dhumpaana, Method of preparation of dhumvarti and it's therapeutic uses. Dhupan: Vranadhupan, arshodhupan.
 - 2.4 Mukhaprayogarth kalpana** - Gandoosha - Kavala - Pratisaran, Tooth paste, Tooth powders and Mouth wash.
 - 2.5 Basti kalpana**- Classification, Method of preparation of Niruha and Anuvasana, Basti Therapeutic properties and uses of Basti.
- 3** Brief knowledge of Standardization of Ayurvedic formulations- Kasthaushadhi.
- 4** Brief introduction of Drug and Cosmetics Act 1940 and Rules 1945.
- 5** Concept of, Aushadhi Nirmanshala, with respect to Good Manufacturing Practices (GMP) in accordance to Schedule T.

Practical Bhaishajya Kalpana

50 Marks

Following practicals to be performed- (Minimum one from each category)

Method of preparation, therapeutic uses, dose and anupana of the following

- 1.** Swarasa- Ardraka swarasa, Tulasi swarasa, Kumari Swarasa, Vasa putapaka swarasa
- 2.** Kalka- Nimba kalka, Rasona kalka.
- 3.** Kwatha- Punarnavasthaka kwatha, Rasna Saphthaka kwatha, Kulattha kwath.
- 4.** Hima- Dhanyaka hima, Sarivadi hima .
- 5.** Phanta- Panchakola phanta, Yastimadhu Phanta.

6. Pramathya- Mustadi pramathya
7. Mantha- Kharjuradi mantha
8. Aushadh siddha paniya- Shadanga paniya
9. Laksha Rasa.
10. Arka - Yavani arka, Gulab arka, Misreya arka
11. Panaka- Chinchu panaka, Chandan panaka.
12. Sharkara- Banapsha sharkara, Nimbu sarkara.
13. Churna- Sitopaladi Churna, Hinguwashtaka Churna.
14. Gutika- Chitrakadi Gutika, Sanjivani Vati.
15. Guggulu-Triphala Guggulu, Kaishora Guggulu.
16. Avaleha- Chyavanaprashavaleha, Vasavaleha, Vyaghri Haritaki avaleha, Manibadra avaleha.
17. Rasa kriya - Darvi Rasakriya, Guduchi Ghana, Kutaja Ghana.
18. Khanda- Haridra khanda, Narikela khanda, Sowbhagya shunti paka
19. Satva- Amruta satva,
20. Varti- Phala varti, Chandrodya varthi
21. Lavana- Arka lavana, Narikela lavana
22. Masi- Triphala masi, Mayurpiccha Masi
23. Ksheerapaka- Arjuna ksheerapaka, Rasona ksheerapaka, Shunthi Ksheerapaka
24. Kshara- Apamarga kshara, Snuhi kshara, Ksharasutra. .
25. Manda, Peya, Vilepi, Yavagu, Krishra, Vesavara
26. Yusha - Mudga yusha, Saptamushtika yusha, Kulattha yusha
27. Aristha- Kutajarishta, Takrarishta .
28. Asava - Kumaryasava, Kanakasava
29. Sukta kalpana- Kanji
30. Udaka- Tandulodaka
31. Upanaha- Atasi Upanaha
32. Siktha Taila Nirmaan
33. Malahara- Sarjarasa malahara, Gandaka malahara, Cream, Emulsion. Sneha Kalpana
Sneha Murchhana - Ghrita Murchhana, Taila Moorchnana, Ghrita kalpana: Jatyadi ghrita, Triphala ghrita, ksheerashatphala ghrita- Taila kalpana-Panchaguna taila, Arka taila, Bala taila, Jatyadi taila
35. Taila patana- Bhallataka taila patana, Jayapala taila patana
36. Shodhana- Guggulu, Hingu.

II. Visit of minimum three GMP approved Ayurvedic manufacturing units.

Distribution of Practical Marks: Total 200 Marks

Rasashastra - 100

- | | | |
|----------------|---|----------|
| 1. Record Book | - | 10 Marks |
| 2. Experiment | - | 30 Marks |
| 3. Spotting | - | 20 Marks |
| 4. Viva-voce | - | 40 Marks |

Bhaishajyakalpana - 100

- | | | |
|----------------|---|----------|
| 1. Record Book | - | 10 Marks |
| 2. Experiment | - | 30 Marks |
| 3. Spotting | - | 20 Marks |
| 4. Viva-voce | - | 40 Marks |

Reference Books

1. Adyatan Rasa Shastra
2. Abhinav Rasa Shastra
3. Asava Arishta Vigyanam
4. Ayurvediya Rasa Shastra (Sachitra)
5. Ayurvediya Rasa Shastra
6. Rasa Bhaishajya Paribhasa
7. Ayurvediya Rasa Shastra
8. Ayurved Prakash
9. Drugs and Cosmetic Act - 1940
10. Paka Darpana
11. The Paka-darpana of King Nala
12. Parada Vigyaniam
13. Pratyaksha Aushadh Nirmanam
14. Bhaishjyakalpana Vigyanam
15. Rasa Tarangini
16. Rasa Darpan
17. Rasa Bindu
20. Rasa Bhaishajya Kalpana Vigyan Vaidya
21. Rasa Mitra
22. Rasa Ratna Samuchchaya (Hindi)
23. Rasaratna samuchchaya-
24. Rasaratna samuchchaya -
25. Rasa Shastra Prayogiki Srivastava,
26. Rasamritam
25. Rasayan Sara

- R.K. Goyal
Vaidya Somadev Sharma
Dr. Pakshdhar Jha
Chandrabhusan Jha
Badrinarayan Pandey
Sureshananda Thapaliyal
Prof. Siddhi Nandan Mishra
Vaidya Gujrat Mishra
- Dr. Indradev Tripathi
Dr. Madhulika critical study
Vasudev M. Dwivedi
Acharya VishwanathDwivdei
Dr. Agnihotri
Sadanand Sharma
Prof. Bhajan Das Swami
Dr. Sanjay Sharma
Santosh Kumar Khandal
Dr. Tryambak Nath Sharma
Dattatreya Ananta Kulkarni.
Ambikadatta shastri
Damodar Joshi
Yadav and Prof. Ramesh Saxena
Vaidya Yadavji Tirkramji Acharya
Vaidya Shyam Sunderacharya

26. Rasendra Sampradaya
27. Rasendra Sara Sangraha
29. Vaidyak Paribhasha Pradeep (Hindi Translation)
30. Sharangadhara Samhita
31. Bharatiya Bhaishajya Kalpana Vigyana
32. Bhaishajya Kalpana Vijnanam
33. Rasa Shastra (English)
34. Rasa Ratna Samuchchaya (English)
35. Rasendra Chintamani (Hindi)
36. Ayurvedic formulary of India
38. Ayurvedic Pharmacopiea of India , CCRAS
39. Bhaishjya Kalpana Vigyan
40. Textbook of Rasashasra
41. Ashadhayoga Vigyanam
42. Vaidyaka Paribhasha Pradipa (English Translation)
43. Relevant parts of Brihatrayee
44. Text book of Bhaishjya Kalpana -
45. Text Book of Rasa Shastra
46. Rasa Chandashu
47. Bhaishjya Ratnawali
48. Yoga Ratnakar

Vaishya

Vaidya Hajari Lal Sukul
 Vaidya Gopal Krishna
 Dr. Indradev Tripathi
 Dr. Radhakrishna Parashar
 Gananath Vishwanath Dwivedi
 Dr. K Ramachandra Reddy
 Prof. Damodar Joshi
 Prof. Damodar Joshi
 Prof. Siddhinandan Mishra

Siddhi Nandan Mishra

Dr. K Ramachandra Reddy.
 Dr. K. Ramachandra reddy
 Dr. K. Ramachndra Reddy &
 Dr. P. Suresh

Dr Shobha G Hiremath

Dr P H C Murthy

Prof S S Savirkar (CCRAS Publication)

Prof S N Mishra

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2.4 CHARAKASAMHITA -PURVARDHA

(Sutrasthana, Nidanasthana, Vimanasthana, Sharirasthana and Indriyasthana)

**Theory- One Paper- 100 Marks
Lectures – 200 Hours**

Part A

- | | | |
|------------------|---|----------|
| 1. Sutrasthana | - | 40 Marks |
| 2. Indriyasthana | - | 10 Marks |

Part B

- | | | |
|------------------|---|----------|
| 1. Nidanasthana | - | 15 Marks |
| 2. Vimanasthana | - | 20 Marks |
| 3. Sharirasthana | - | 15 Marks |

Reference Books

1. Charakasamhita –Ayurveda Dipika commentary by Chakrapani.
2. Charakasamhita (Hindi Commentary): Vaidya Jayadev Vidyalankar or Vd. Atridev Vidyalankar or Prof. Gorakha Nath Chaturvedi & Kashinath Shastri or Dr. Brahmanand Tripathy or Dr. Ravi Dutta Tripathy
3. Charakasamhita (English Commentary): Dr. Ram Karan Sharma & Vd. Bhagwan Dash or Acharya Priyavrata Sharma.
4. Charakasamhita-Ayurveda Dipika Commentary-Hindi Translation by Dr. B L Gaur, published by Rashtriya Ayurved Vidyapeeth.

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CENTRAL COUNCIL OF INDIAN MEDICINE
NEW DELHI

SYLLABUS OF AYURVEDACHARYA (BAMS) COURSE

INDEX

4TH PROFESSIONAL

4.1 KAYACHIKITSA	02-04
4.2 PANCHKARMA	05-10
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4.1 KAYACHIKITSA

Theory Two Papers – 100 Marks Each
Practical/Viva voce – 100 Marks

Paper I

100 Marks

Part - A

50 Marks

- 1 Derivation of the terms 'Kaya', 'Chikitsa' and their definitions and synonyms. Definition of 'Kayachikitsa, Definition of 'Bheshaja'. Types and detailed description of Bheshaja and Chikitsa, Knowledge about Chikitsa Chatushpada, Rogi Roga Pariksha Siddhantha, Astasthana Pariksha.
- 2 Importance of Kriya Kaala according to stages of Dosha and their management.
- 3 Chikitsa sutra and Management of vriddhi (increased) and kshaya (decreased) of Dosha, Dhatu and Mala, Ojo Vyapat (Kshaya, Visramsas and Vyapat) and its management. Chikitsasutra and Management of Sama-Nirama states, Roga-Anutpattikara Chikitsa, Roga Prashamana Chikitsa (Doshapratyanika, Vyadhipratyanika, Ubhayapratyanika), Doshopakrama, Chikitsa sutra and Management of Sthanantara Dosha (Ashayapakarsha, Anuloma/Pratiloma gati of Dosha, Vimarga gamana of Dosha), Knowledge of Lina Dosha & its management, Diagnosis, Chikitsa Sutra and Management of Avarana and of Dhatu Pradoshaja diseases, Importance of Dosha, Dushya, Bala, Kaala, Agni, Prakriti, Vaya, Sattva Satmya, Desha, Ahara and stage of diseases in treating them. Chikitsa Sutra and Management of 'Samanyaja and Nanatmaja' diseases.
- 4 Detailed description of Dvidividhopakrama (Santarpana and Apararpana) and Shadavidhopakrama (Rookshana, Snehana, Swedana, Sthambhana, Langhana and Brimhana). Detailed description of Shodhana, Shamana and Nidana Parivarjana. Knowledge of Aushadha matra, Sevan kaala and Anupana, Definition and Knowledge of Pathya-Apathya with examples of diseases of various systems.
- 5 Derivation of the term 'Manas', its sthana (place), Guna (qualities) and Karma (functions). Samanya Chikitsa Siddhanta of Manasa Roga.
- 6 Principles & Management of Nutritional deficiency disorders.
- 7 Management of Vardhakyajanita vikara, Indriyapradoshaja vikara, Alzhiemer's Disease, Sleep disorders, General debility.

- 8 General introduction and principles of Management of diseases produced by Genetic, Environmental and Iatrogenic factors. Disorders due to drug and Food allergy and their management and other allergic conditions.

Part B

50 Marks

1. Detailed description of Chikitsa Sutra and Management of Jwara and its types. Etiopathogenesis & relevant Ayurvedic and Modern management of following types of Fevers-Typhoid, Pneumonia, Pleurisy, Influenza, Mumps, Meningitis, Encephalitis, Tetanus, Yellow fever, Plague, Dengue Fever, Chikun Guniya, Leptospirosis, Viral Fever, Anthrax, Masurika (Small pox), Laghu Masurika (Chicken pox), Romantika (Measles).
1. Chikitsa sutra and Management of the diseases of Rasavaha Srotas such as – Pandu, Amavata, Madatyaya, Hridroga, Hridshoola, Hypotension, Hypertension, Anaemia, Rheumatoid arthritis.
2. Chikitsa sutra and Management of the diseases of Raktavaha Srotas such as - Raktapitta, Kamala, Kumbhakamala, Halimaka, Daha, Mada, Murcha, Sanyasa, Vatarakta, Plihadosha, Yakrut dosha, Haemolytic disorders, Hepatitis, Cirrhosis of Liver, Leukaemia, Kushta, Shvitra, Visarpa, Sheetapitta, Udarda, Kotha and Kshudra Roga.
3. Knowledge of National Health Programmes and the relevant Ayurvedic Management of the following diseases enlisted by World Health Organisation- Malaria, Filaria, Kala Azar, Leprosy, Tuberculosis, AIDS.
4. Introduction of general principles of maintenance of health and management of diseases of following systems of Medicine- Yoga, Naturopathy, Unani, Siddha, Physiotherapy and Rehabilitation.
5. Diseases of different Endocrine Glands- such as Thyroid, Parathyroid, Pituitary, Pancreas and Adrenal glands and their management.
6. General introduction, types and Management of diseases caused by Vyadhi Kshamatwa Hinata (Immuno deficiency disorders), Auto Immune Disorders.
7. Description and Management of following Emergency Conditions- Acute Haemorrhage, Hypertensive Emergencies, Acute abdominal pain (Renal colic, Biliary colic, Gastritis, Pancreatitis, Peritonitis and Appendicitis), Acute Abdomen, Anuria/ Oliguria, Congestive Heart Failure, Myocardial Infarction/Angina, Shock, Syncope, Convulsions, Hyperpyrexia, Hyperglycaemia, Hypoglycaemia, Status Asthmaticus, Acute Respiratory distress Syndrome, Drowning and Electric shock.

PAPER II

100 Marks

Part A

50 Marks

1. Chikitsa sutra and Management of the diseases of Pranavaha Srotas such as - Kasa, Shwasa, Hikka, Rajyakshma, Urakshata, Parshwashoola, Bronchitis, Bronchiectasis, Emphysema and COPDs.
2. Chikitsa sutra and Management of the diseases of Udakavaha Srotas such as- Shotha, Jalodara, Trishna, Water & Electrolyte Imbalance.
3. Chikitsa sutra and Management of the diseases of Annavaha Srotas such as – Agnimandya, Aruchi, Ajirna, Anaha, Atopa, Adhmana, Alasaka, Vilambika, Visuchika, Chardi, Grahani, Amlapitta, Gulma, Shoola, Bhasmaka, Acid peptic disorders.
4. Principles of treatment and management of Vata Vyadhi such as - Pakshavatha, Ekgavata, Sarvangavata, Ardita, Avbahuka, Kati Graha, Manyastambha, Gridhrasi, Vishwachi, Khalli, Khanja, Pangu, Padaharsha, Padadaha, Vatakantaka, Kroshtukashirsha, Udavarta, Kampavata, Dhatugata and Ashayagata Avarana Vata, other Vata Rogas, Parkinsonism.
5. Nidana and Chikitsa of Urusthambha, Gullian Barrie syndrome, Muscular Dystrophy, Myasthenia Gravis, Motor Neuron Diseases and Neuralgia.

Part B**50 Marks**

1. Chikitsa Sutra and Management of Mamsavaha Srotas and Medovaha Srotas such as- Gandamala, Galaganda, Mamsashosha, Arbuda, Apachi, Prameha, Sthaulya, Karshya, Diabetes Mellitus, Dyslipidaemia.
2. Chikitsa Sutra and Management of 'Asthi and Majjavaha Srotas such as Asthimajja Vidradhi, Asthisoushrya, Asthi kshaya, Sandhigata Vata, Osteo Arthritis, Osteomyelitis, Osteoporosis, Osteopenia.
3. Chikitsa sutra and management of Shukravaha srotas such as Klaibya, shukralpata, shukradosha, kshina shukra, dhvajabhanga.
4. Chikitsa Sutra and Management of diseases of Mutravaha Srotas such as -Mutrakricha, Mutraghata, Ashmari, Cystitis, Nephritis, Nephrotic Syndrome, BPH, Renal Failure.
5. Chikitsa Sutra and Management of diseases of Purishavaha Srotas such as - Atisara, Pravahika, Arsha, Purishaj Krimi, IBS and Ulcerative Colitis.
6. Chikitsa Sutra and Management of Sexually Transmitted Diseases such as - Phiranga, Puyameha, Upadamsha, lymphogranuloma inguinale, Syphilis, Gonorrhoea.
7. Introduction, Definition and Management of Kama, Krodha, Lobha, Moha, Mada, Matsarya, Shoka, Bhaya, Vishada, Dainya, Harsha and Pragyaparadha.
8. Manas and Manovahasrotas, Nidana and Chikitsa of the following disorders - Unmada- Apasmara-Atattvabhinivesha, Chittodvega, Vishada, Anxiety disorders, Depression, Somatoform and Mood disorders, Stress induced disorders, Psychosexual Disorders. Importance of Daivavyapashraya, Sattwavajaya, Adivyabhuta Chikitsa. Medhya Rasayana in the management of Manasa Roga. Bhuta Vidya diagnosis and management of graha disorders.
9. Derivation, definition and synonyms of Rasayana, importance of Rasayana and its benefits. Indications of Rasayana therapy. Classification of Rasayana. Kutipravesika and Vatatapika Rasayana. Indications of Vatatapika Rasayana. Knowledge of Kayakalpa, Achara Rasayana. Procedures of Kutipravesika, Poorvakarma and specific schedules to be followed after Kutipravesha, benefits of Kutipravesika Rasayana, duration of process, Rasayana yoga and directions for their use. Determination of dose of Rasayana according to age. Rules and regulation after Rasayana therapy, Importance of Immunomodulators and antioxidants in Rasayana therapy.
10. Vajikarana- Derivation, definition, synonyms, necessity, benefits, importance of fertility, Symptoms of Shūkra (Semen), Vajikaran Dravya and Aushadhi. Properties, doses, methods of administration, ingredients and methods of formation of Rasayana & Vajikarana formulation. Classification and importance of Vajikarana Dravya

Distribution of practical Marks 100

- | | |
|--------------------------------|------------|
| 1) Daily case record/ 20 cases | - 20 marks |
| 2) Patient examination | |
| a) 1 Long case | - 20 marks |
| b) 1 short case | - 10 marks |
| 3) Viva -voice | |
| a) Paper I | - 25 marks |
| b) Paper II | - 25 marks |

Reference books:

1. Charak Samhita, Sushrut Samhita, Ashtanga Samgraha and Ashtanga Hridaya with their commentaries. Madhav Nidana with Madhukosha Commentary.
2. Ayurvediya Vyadhi Vigyana - Yadavji Trikamji
3. Roga Pariksha Vidhi - Priyavrat Sharma

4. Panchakarma Vigyan -Haridasa Sridhar Kasture
5. Cikitsadarsha -Pandit Rajesvardutta Shastri
6. Kayachikitsa I-IV -Ramaraksha Pathaka
7. Ayurved Nidan Chikitsa Siddhanta -Prof. R.H.Singh.
8. Kayachikitsa Vol. I-IV. -Prof. Ajay Kumar
9. Davidson's Principles and Practice of Medicine.
10. API Text Book of Medicine.
11. Harrison's Text Bok of Medicine.
12. Cecil Text Book of Medicine.
13. Panchkarma Illustrated by Dr. G.Srinivasacharya.
14. Other relevant publications on subjects concerned

4.2. PANCHAKARMA

Theory One Paper – 100 Marks

Practical Viva-voce – 50 Marks

Hours of teaching Theory – 100

Clinical training: 3 months

I. Introduction

1. Introduction to Panchakarma, Panchakarma and Shodhana, its importance for promotion of health, prevention and treatment of diseases.
2. Trividha Karma- Purva, Pradhana and Pashchat Karma in relation to Shodhana and their importance.
3. Indications of Shodhana, Shodhana according to Ritu
4. General Principles of doshagati from Koshta to Shaka and vice versa
5. General precautions (Pariharya Vishaya) for Panchakarma
6. Specifications of Panchakarma theatre and necessary equipments
7. Importance of Koshta and Agni Parikshan

II. Snehana

1. Etymology and Definition of Sneha and Snehana
2. Snehayoni- Sthavara and Jangama: Properties of Sneha dravyas, Snehopag Dravyas
3. General knowledge of Ghrita, Taila, Vasa and Majja with their specific utility and actions ,Yamaka, Trivrit and Maha Sneha
4. Metabolism of fat
5. Achcha and Pravicharana of Sneha
6. Snehapaka and its importance in Panchakarma
7. **Types of Snehana:** i) Bahya and ii) Abhyantara Snehana

i) Bāhya Snehana :

Methods, indications and contraindications of the following types of Bahyasnehana; Mardana, Unmardana, Pādāghāta, Samvāhana, Karna Purana & Akshi Tarpan, Lepa, Talam,

Murdhni Taila: Siro-Abhyanga, Shiro Seka/dhārā, Siro Pichu and Siro-Basti

ii) Ābhyantara Snehana

Three Types of Ābhyantara Snehana: Shodhanārtha, Shamanārtha and Brimhanārtha Snehana, Indications and contraindications for Snehana

Shodhanārtha Snehana

- a. Importance and method of Deepan Pāchan and Rookshana in Shodhanārtha Snehana. Properties of Rookshana Dravya. Samyak Rookshana Lakshana
- b. Consideration of Agni and Koshtha in Snehana
- c. Indication of Different Matra, Various dose schedules for Shodhanārtha Snehana; Hraseeyasi, Hrasva, Madhyama and Uttama Mātrā, Ārohana Mātrā
- d. Methods of Shodhanārtha Snehana,
- e. Anupāna of Sneha

- f. Jeerna and Jeeryaman Lakshana
- g. Samyak Yoga, Ayoga and Atiyoga of Snehana, Sneha Vyāpat & their management according to Ayurveda & Modern Medicine
- h. Diet and regimen during Snehana

Sadyo Sneha: Method of administration, dose fixation and utility

Shamanārtha Snehana, Method of administration, dose fixation and utility

Bronhanarth Senhana: Method of administration, dose fixation and utility

Avapeedak Sneha: Method of administration, dose fixation and utility

8. Snehana Kārmukata (mode of action)

9. **Special Procedures:**

Takradhara, Udvartanam, Putpāka, Aschotana, Anjana, Gandusha, Kavala, Dhoompāna, Udvartana, Utsādana, Udgharshana, Talapothichil

III. Svedana

1. Etymology and Definition of Sveda and Svedana
2. Classifications of Sveda/Svedana
3. General Sweda dravya, Properties of Sweda dravyas, Swedaopag dravyas ,
4. Indications and contraindications of Svedana
5. Ten Types of Niragni Svedana
6. Knowledge of 13 types of Sagni Svedana and Chaturvidh Svedan
7. Detailed Knowledge with their Utility of the following Svedana procedures:
Sankara/Pinda Sveda-Ruksha and Snigdha Sveda
Patrapinda Sveda, Jambir Pinda Sveda, Vāluka Sveda, Churna Pinda Sveda, Kukkutand
Pinda Sveda, Shashtika Shalipinda Sveda, Nadi Sveda, Bashpa Sveda Ksheer
dhooma , Ksheer Seka, Kwath Seka, Avagaha Sveda, Dhanymla Dhara
Parisheka Sveda, Pizichil, Upanaha Sveda, Annalepa
8. Local Basti such as Kati Basti, Janu Basti, Greeva Basti and Urobasti
9. General precautions during Sagni Svedana and Methods to protect vital during svedana
10. Samyak Yoga, Ayoga and Atiyoga of Svedana
11. Complications of Svedana and their Management according to Ayurveda & Modern Medicine
12. Diet and management during and after Svedana
13. Parihār Vishaya
14. Svedana Kārmukata (Mode of action)
15. General Knowledge about current Sudation techniques like Sauna bath, Steam bath

IV. Vamana Karma

1. Etymology, definition and importance of Vamana Karma
2. Utility of Vamana Karma in health and disease
3. Indications and Contraindications for Vamana
4. Knowledge of Koshta and Agni
5. General knowledge of Vamana and Vamanopaga drugs; properties, actions, preparations, preservation with special reference to Madanphala, Kutaj, Nimba, Yashti, Vacha
6. Purva Karma of Vamana: Deepan-Pāchana, Abhyantara Snehana and diet

7. Management of one gap day-Abhyanga & Svedana, diet, special Kapha increasing diet
8. Preparation of the patient on Morning of Vamana day
9. Vamaka Yoga, Anupana, fixation of dose and method of administration
10. Administration of Vamanopaga Dravya such as milk, sugarcane juice, Yashtimadhu decoction
11. Lakshana indicating Doshagati during the process
12. Management during Vamana Karma & observations
13. Symptoms of Samyak Yoga, Ayoga and Atiyoga of Vamana Karma
14. Post Vamana management
15. Types of Shuddhi-Hina, Madhya and Pravara
16. Peyadi Samsarjana Krama and Tarpanadi Kram with their specific indications
17. Complication of Vamana and their management with Ayurveda and modern drugs
18. Pariharya Vishaya
19. Vamana Karmukata (Mode of action).

V. Virechana Karma

1. Etymology, definition and importance of Virechana Karma
2. Utility of Virechana Karma in health and disease
3. Indications and Contraindications for Virechana
4. Knowledge of Koshta and Agni
5. Classification of Virechana Drugs, General properties of Virechana dravya
6. General knowledge of single and compound Virechana drugs; properties, actions, preparations, preservation with special reference to Trivrutta, Aragvadha, Eranda, Katuki, Jaipal
7. Purva Karma of Virechana: Deepan- Pachana, Abhyantara Snehana and diet
8. Management of 3 gap days-Abhyanga, Svedana & diet
9. Management on Morning of Virechana day
10. Preparation of Virechana Kalpa, Anupana, dose and method of its administration
11. Method of Virechana Karma and management during Virechana Karma & observations
12. Symptoms of Samyak Yoga, Ayoga and Atiyoga of Virechana Karma
13. Post Virechana management
14. Types of Shuddhi-Hina, Madhya and Pravara and accordingly Samsarjana Krama
15. Complications of Virechana and their management with Ayurveda and modern drugs
16. Pariharya Vishaya
17. Virechana Kārmukatā (Mode of action)

VI. Basti Karma

1. Etymology, definition and importance of Basti as Ardha-Chikitsa
2. Utility of Basti Karma in health and disease
3. Basti Yantra- Putaka & Netra, Detailed study of traditional Basti Yantra and their Doshas
Knowledge of alternative Basti Yantra-enema can, enema syringe, modified plastic/rubber bag for Putaka, modified plastic netra.
4. Classifications of Basti

5. Karma, Kāla and Yoga Basti schedules along with their utility.
6. **Niruha Basti:** Its etymology, synonyms, definition, classifications, sub-classifications & indications and contraindications.
 - a. Dose fixation of Niruha Basti according to age
 - b. Contents and Method of preparation of Niruha Basti dravya
 - c. Diet
 - d. Administration of Niruha Basti
 - e. Pratyāgamana Kāla, Post Niruha Basti management
 - f. Samyak Yoga, Ayoga and Atiyoga of Niruha.
 - g. Complication of Niruha Basti and its management according to Ayurved and Modern Medicines
 - h. Pariharya Vishaya and kala
7. **Anuvasana Basti:** Its etymology, synonyms, definition, classifications, sub-classifications & indications and contraindications.
 - a. Dose fixation of Anuvasan Basti according to age
 - b. Contents and Method of preparation of Anuvasan Basti dravya
 - c. Diet
 - d. Administration of Anuvasan Basti
 - e. Pratyāgamana Kāla, Post Anuvasan Basti management
 - f. Samyak Yoga, Ayoga and Atiyoga of Anuvasana.
 - g. Complication of Anuvasan and its management according to Ayurved and Modern Medicines
 - h. Pariharya Vishaya and kala
8. Basti Kārmukatā (Mode of action).
9. Knowledge of following types of Basti:
Madhutailika Basti, Erandmuladi Basti, Yāpana Basti, Pichchha Basti, Kshira Basti, Kshara Basti, Vaitarana Basti, Panchaprasutik Basti, Lekhan Basti, Krumighna Basti, Tiktashir Basti, Ardhamātrika Basti
10. **Uttara Basti:** its definition, indications and contraindications, Detailed study of traditional Basti Yantra and their Doshas Knowledge of alternative Basti Yantra
 - a. Preparation of patient,
 - b. Preparation of Trolley for Uttarbasti,
 - c. drug preparation and Fixation of dose,
 - d. method of administration in male and females,
 - e. observations,
 - f. complications and their management

VII. Nasya

1. Etymology, definition, Significance of Nasya Karma.
2. Classifications and sub-classifications
3. Knowledge of general Dravya used for Nasya Karma, Shirovirechan Gana, Shirovirechanopag dravyas
4. Indications and contraindications of Nasya
5. Time of administration of Nasya
6. Dose fixation of different types of Nasya
7. Diet and regimen before and after Nasya Karma
8. Administration of Marsha, Pratimarsha, Avapeedaka, Dhoomapana and Dhuma Nasya
9. Symptoms of Samyak-yoga of Nasya,

10. Complication of Nasya and their management
11. Parihār Vishaya
12. Nasya Karmukata (mode of action)

VIII. Raktamokshana

1. Definition, importance and Types of Raktamokshana
2. General Principles and rules of Raktamokshana
3. Classification of Raktamokshan
4. General Indication and Contra indication of Raktamokshan
5. **Jalaukavacharana:** Knowledge of different types of Jalauka (Leech) , Indications and contraindications of Jalaukavacharana, various types of Jalauka. Method of Application, Samyak Lakshan, Complication of Jalaukavacharana and their management with Ayurveda and Modern medicines.
6. **Pracchāna:** Indications and contraindications of Pracchana. Method of Application, Samyak Lakshan, Complication of Pracchana and their management with Ayurveda and Modern medicines
7. **Sirāvedha:** Indications and contraindications of Siravedha. Method of Application, Samyak Lakshan, Complication of Siravedha and their management with Ayurveda and Modern medicines
8. Knowledge of emergency management of complications such as water & electrolyte imbalance, shock, bleeding per rectal, hematemesis, epistaxis

IX. Physiotherapy

1. Definition, Utility and Importance of Physiotherapy.
2. Basic Knowledge of Static exercise, Infrared, Short wave diathermy, Electromagnetic therapy, Wax bath therapy, Ultrasonic therapy.

PRACTICALS / CLINICAL TRAINING –

Total Duration of 3 Months posting

OPD (for 1-Month): observation of OPD patients, selection of the patients, observation of OPD base Panchakarma procedures

IPD (Panchakarma) and Panchakarma Unit – Observation of different procedures of Panchakarma, Assistance to the procedure under guidance of Panchakarma specialist

Under clinical posting, each student has to study and write 15-long Cases and 10 short cases in prescribed format

Long case Paper- minimum 1 Vaman , 1 Virechan, 1Niruha & Anuvasan Basti, 1Nasya, 1 Raktamokshan

Short case paper –Minimum one each of Pinda sweda, Shirodhara, Abhyanga, Netra Tarpan, Bahya Basti, Nadi Sweda etc.

Distribution of Marks

- | | |
|--------------------------------------|----------|
| 1. Practical Record of 25 procedures | 05 Marks |
| 2. Long Procedure | 10 Marks |

3. Long Procedure Viva	05 Marks
4. Short Procedure	08 Marks
5. Viva on Short Procedure	02 Marks
6. General Viva-voce	20 Marks
Total	50 Marks

Reference Books

1. Charak Samhita with Commentary of Ayurveda Dipika by Chakrapanidatta & Jalpakalpataru by Gangadhara
2. Sushrut Samhita with the Sushruta Nibhandha Samgraha Commentary of Dalhana & Nyayachandrika Panjika of Gayadasa on Nidana Sthana
3. Ashtanga Hridaya with Sarvanga Sundara & Ayurveda Rasayana Commentaries
4. Ashtanga Sangraha with Shashilekha Commentaries
5. Ayurvediya Panchakarma Chikitsa Dr Mukundilal Dwivedi
6. Panchakarma Vigyan Dr Haridas Shreedhar Kasture
7. Illustrated Panchakarma Dr.G Srinivasa Acharya
8. Clinical Panchkarma (English) Dr. P.Yadaiah
9. Prayogika Panchkarma (Hindi) Dr. P. Yadaiah
10. Vivida Vyadhiyome Panchkarma (Hindi) Dr. P. Yadaiah
11. The Panchkarma Treatment of Ayurveda with Kerala Specialtie Dr. T.L. Devaraj
12. Panchkarma Therapy Dr. R.H. Singh
13. Ayurveda-Principles and Panchakarma Practice Dr Mandip R. G. & Prof. Gurdip Singh
14. Principles and Practice of Basti Dr. Vasudevan & Dr. L. Mahadevan
15. Panchakarma Sangraha Dr. Manoj Shamkuwar
16. Essential of Panchakarma Therapy Dr.Pulak Kanti Kaur
17. Principles and Practice of Panchakarma Vaidya Vasant Patil
18. Harrison's Principle of Internal Medicine
19. Guyton's Physiology

4.3 SHALYA TANTRA

Theory Two Papers – 100 Marks Each
Practical - Viva voce – 100 Marks

PAPER –I

100 Marks

Part – A

50 Marks

Definition of Shalya, Shalya Tantra and its importance. Introduction to Shalya

Tantra: Historical background and progress made.

- **Target** - Fluency in textual reading and comprehension.
- Preferable targets - Know recent developments and controversies.

Description of Yantra, Shastra, Anushastra: Definition, number, types, uses, Dosh, Guna, Karma. Relevant modern instruments.

- Target - Basic understanding of the concepts of Yantra and Shastra. Acquaintance with commonly used surgical instruments. Knowledge of textual descriptions.
- Preferable targets - Knowledge about currently used surgical instruments, their specifications, procurement sources etc.

Nirjantukarana / Sterilization: Methods, types and its role in surgical practice.

- Target - Basic surgical discipline of maintaining asepsis.
- Preferable targets- Knowledge of recently developed chemicals, instruments for sterilization.

Sangyahan / Anaesthesia: Definition and Types.

- Local anaesthesia** – Drugs, Techniques, Indications, Contraindications, Complications and their Management.
- Regional and General anaesthesia**- Drugs, Techniques, Indications, Contraindications, Complications and their Management.
 - Target-Basic knowledge of the drugs and instruments of anaesthesia. To observe the process of induction, monitoring and recovery.
 - Preferable targets- Assisting and handling anaesthesia.

Trividha Karma – Purva Karma, Pradhana Karma and Paschat Karma.

- Target- Capability to identify conditions which can affect the outcome of surgery in pre, intra and post- operative period.
- Preferable targets- Experience of handling incidents.

Ashtavidha Shastra Karma - Surgical procedures.

- Targets- Appreciation and comprehension of concepts and indications of different procedures.
- Preferable targets –Hands on experience of surgical procedures.

Yogya - Experimental Surgery.

- Target –Appreciation and comprehension of concepts of Yogya. Idea of patient's safety in experimental training.
- Preferable targets- Hands on training on mannequins.

Marma: Nirukti, types, description and importance.

- Target –Clinical application of concepts of marma.
- Preferable targets- Study of relevance of marma in the light of current anatomical and surgical knowledge.

Kshara and Kshara Karma:

- Nirukti, Pradhanyata, Guna, Dosh, Karma, Prakara, Yogya, Ayogya, Procedure, Upadrava and Chikitsa.**
- Kshara nirmana vidhi, knowledge of Kshara Varti, Taila and Pichu.
- Kshara Sutra – Preparation, Indications, Contraindications and Method of application, Complications and their Management.**
 - Target – Capability to identify and practice the use of kshara, kshara sutra in common clinical conditions.
 - Preferable targets – Broader knowledge of current trends and ongoing researches in kshara application.

Agnikarma: Mahatva, Upakarana, Vidhi, Akrti bheda, Yogya, Ayogya and Upadrava Chikitsa.

Contemporary techniques and tools of Agnikarma.

- Target - Capability to appreciate the clinical indications and comprehend Agnikarma procedure.
- Preferable targets - Hands on experience of use of cautery in surgical practice.

Raktamokshana: Mahatva, Prakara - Siravyadha, Pracchanna, Shringa, Alabu, Jaloukavacharana – Yogya, Ayogya, Procedure, Upadrava and Chikitsa.

- Target- Capability to appreciate and comprehend clinical indications of Jaloukavacharana and other Raktamokshana procedures.
- Preferable targets - Uses of bloodletting in current therapy.

Bandha Vidhi – Prayojana, Dravya, Indications, Contraindications, Prakara, Upadrava, Pichu, Plota, Kavalika and Vikeshika.

- Target- Hands on experience of techniques of bandaging.
- Preferable targets - New generation of bandaging and splintage tools.

Pranasta Shalya and Nirharana Upaya.

- Target – Importance of concepts of Sushruta in the management of Shalya and concerns of patient safety. Identification and management of foreign bodies.
- Preferable targets - Current concepts and diagnostic tools of dealing with foreign bodies.

Fluid, Electrolyte, Acid Base Balance and Nutrition:

- i. Introduction of physiology of fluids and electrolytes.
- ii. Dehydration and over hydration.
- iii. Specific electrolyte loss, Acidosis, Alkalosis, Symptomatology and Management.
- iv. Electrolyte changes in specific diseases like pyloric stenosis, intestinal obstruction and anuria.
- v. Various replacement fluids in surgery, mode of administration and complications.
- vi. Nutrition.
 - Target – Capability to identify and manage fluid and electrolyte imbalance. Ability to administer parenteral fluid.
 - Preferable targets - Advanced techniques of fluid and electrolyte assessment and management.

Rakta Mahatwa, Raktasrava / Haemorrhage: Prakara and Lakshana.

- i. Raktastambhana – Haemostasis.
- ii. Blood Transfusion –Blood groups, Compatibility, Indications, Contraindications and Complications with Management.
- iii. Component therapy.
 - Target-Knowledge of achieving haemostasis in haemorrhage.
 - Preferable targets - Detailed knowledge of blood bank techniques.

Antibiotics, analgesics, anti-inflammatory and emergency drugs in surgical practice.

- Target – Working knowledge of commonly used drugs.
- Preferable targets - Advanced pharmacological study of the above drugs.

Diagnostic techniques – X-ray, Imaging techniques, Ultrasonography, CAT Scan, MRI, Biopsy / Cytological study.

- Target- Knowledge of proper indications for optimum investigational tools and their interpretation.
- Preferable targets - Capability to work independently in the field of diagnostic techniques.

Part - B**50 Marks****Shat Kriyakala in surgical practice.**

- Target- Clinical utility of the concepts.
- Preferable targets - Applied aspects of Kriyakalas in the light of current concepts of pathogenesis.

Nirukti, Nidana, Samprapti, Prakara, Lakshana, Sadhya-asadhyata, Upadrava and Chikitsa of the following disorders.

- i. Vranashotha - Inflammation
- ii. Vidhradi - Abscess
- iii. Pidika - Boils
- iv. Nadi Vrana - Sinus / Fistulae
- v. Vrana Granthi - Keloid / Hypertrophic scar

- vi. Marmagata - Shock
- vii. Kotha – Gangrene and Principles of Amputation.
- viii. Granthi - Cyst
- ix. Arbuda - Tumour
 - Target-Clinical application of the concepts.
 - Preferable targets - Hands on experience of management of different conditions.

Vrana – Nirukti and Prakara

- i. Nija Vrana – Nidana, Samprapti, Vrana Vasthu, Prakara, Lakshana, Vrana Pariksha – Sthana, Vrana Akrti, Srava, Gandha, Vedana. Vrana Avastha- Dustavrana, Shuddha Vrana, Ruhyamana Vrana, Samyak Roodha Vrana, Vrana Sadhya-asadhyatha and Vrana Upadrava.
- ii. Vrana Chikitsa – Pathya-apathya and Shashti Upakrama, Vranitagara and Rakshakarma.
- iii. Agantuja Vrana :
 - a. Sadyo Vrana - Traumatic wounds – Nidana, Prakara, Lakshana, Upadrava and Chikitsa.
 - b. Management of bites and stings.
- iv. Dagdha Vrana – Burns and scalds.
- v. Ulcer - Types and their management.
- vi. Wound healing stages and their management.
- vii. Pramehapidaka - Diabetic carbuncle and wounds.
 - Target - Clinical application of the concepts.
 - Preferable targets - Hands on experience of management of different conditions.

Twak Vikara - Nidana, Samprapti, Lakshana and Chikitsa of Chippa – Paronychia, Kadara – Corn and Kshudra rogas.

- Target - Clinical application of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Manya Vikara – Nidana, Samprapti, Lakshana and Chikitsa of Galaganda – Goitre, Gandamala, Apachi –Lymphadenitis, Pashanagardhabha – diseases of parotid gland.

- Target-Clinical application of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Sira Vikara - Venous disorders – Superficial and Deep venous thrombosis, Haemangioma, Varicose veins - Diagnosis and their Management.

- Target - Clinical application of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Dhamani Vikara - Arterial disorders – Nidana, Samprapti, Lakshana and Chikitsa of Aneurysm, Buerger’s disease, Atherosclerosis, Raynaud’s disease.

- Target - Clinical application of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Snayu Vikara - Diseases of tendons and ligaments – Tennis elbow, Ganglion and their Management.

- Target - Clinical application of the concepts.

- Preferable targets - Hands on experience of management of different conditions.

Care of AIDS - HIV and hepatitis infected patients.

- Target - *Knowledge of safety precautions.*

PAPER - II

100 Marks

Part - A

50 Marks

Bhagna – Skeletal injuries: Prakara including pathological fracture, Samanya Lakshana, Upadrava and Chikitsa.

Description of fracture of following bones with Clinical features, Diagnosis, Complications and Management – scapula, clavicle, humerus, radius, ulna, femur, patella, tibia and pelvis bones.

Sandimoksha - Dislocation: Dislocation of following joints with Clinical features, Diagnosis, Complications and Management of shoulder, elbow and hip.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of bone: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Congenital anomalies, Osteomyelitis, Cysts, Tumours and Tuberculosis.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Cranio-cerebral injuries: Mechanism, Pathology, Classification, Investigations, Complications and primary management.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of Spine: Mechanism, Pathology, Classification, Investigations, Complications and primary management of Tuberculosis, Ankylosing Spondylitis and Disc prolapse.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of breast: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Sthana Vidradhi - Breast abscess and Sthana Arbuda - Breast tumours.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of chest: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Chest injury, Pleural effusion, Pleurisy and Tumours.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of esophagus: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Congenital anomalies, Oesophagitis, Varices, Ulcer and Tumours.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Gulma Roga - Nidana, Prakara, Lakshana, Upadrava and Chikitsa.

Shoola vyadhi - Nidana, Prakara, Lakshana, Upadrava and Chikitsa.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of acute abdomen.

Udara Roga: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Jalodara - Ascites, Chidrodara – Perforation, Peritonitis and Badhagudodara-Intestinal obstruction.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of stomach and duodenum: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Pyloric Stenosis, Peptic Ulcer and Tumours.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of small intestine: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Tuberculosis, Obstruction and Perforation.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of large intestine - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Tuberculosis, Obstruction, Perforation, Tumours, Appendicitis, Crohn's disease and Ulcerative Colitis.

- Target - Clinical utility of the concept.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of Rectum and Anal Canal – Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Congenital disorders, Arshas - Haemorrhoids, Parikartika - Fissure-in-ano, Bhagandara - Fistula-in-ano, Guda Vidradi - Anorectal abscesses, Gudabhramsa - Rectal prolapse, Sanniruddaguda - Anal stricture, Incontinence, Rectal Polyp and Tumours.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Abdominal injuries and their management.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Part – B

50 Marks

Diseases of Liver: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Yakrit Vidhradi - Abscess, Neoplasia, Portal hypertension and Yakritdalyodar –Hepatomegaly.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of Gallbladder: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Cholecystitis, Cholelithiasis, Obstructive jaundice and Tumours.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of Pancreas: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Pancreatitis, Cysts of Pancreas and Tumours.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of Spleen – Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Pleehodara – Splenomegaly and Splenic rupture.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of Kidney and Ureters - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Congenital anomalies, Polycystic kidney, Injuries, Perinephric abscess, Calculus and Neoplasms.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of Urinary bladder – Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Congenital anomalies, Injuries, Ashmari - Vesical Calculus, Cystitis and Neoplasms.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Mutraghata and Mutrakrichra - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management. Retention of urine.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of Prostate - Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Prostatitis, Prostatic abscess, Benign Enlargement of Prostate and Carcinoma of Prostate.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of Urethra – Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Urethritis, Stricture and Rupture.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of Penis: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Congenital anomalies, Niruddhaprakasha -Phimosis, Parivartika -Paraphimosis, Avapatika - Prepuceal ulcer, Arbuda- Tumours and Lingarsha - Penile Warts.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Diseases of Scrotum and Testis: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Epididymo-orchitis, Epididymal cyst, Scrotal filariasis, Shukrashmari - Seminal calculus, Torsion of testis, Ectopic testis, Undescended testis and Tumours.

Vridhhi Roga: Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Mutravridhhi – Hydrocele.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

Antra Vridhhi – Aetiopathogenesis, Classification, Clinical features, Diagnosis, Complications and Management of Hernia - Inguinal, Femoral, Epigastric, Umbilical, Incisional and rare forms of Hernia.

- Target - Clinical utility of the concepts.
- Preferable targets - Hands on experience of management of different conditions.

PRACTICALS

Content of Practicals:

1. Identification, uses, demonstration of surgical instruments and methods of sterilization.
2. Training of case taking, bed side clinicals and case presentation.
3. Demonstration and Practical training in Anaesthesia.
4. Training to develop skills in following Parasurgical and other procedures
 - i. Kshara Karma
 - ii. Agnikarma
 - iii. Kshara Sutra
 - iv. Raktamokshana
 - v. Application of bandages and splints
 - vi. Catheterization
 - vii. Wound management procedures like Parisheka and Patradana
 - viii. Ryle's tube aspiration
 - ix. Injections -Intramuscular / Intravenous / Subcutaneous / Intradermal
 - x. Incision and drainage of abscess
 - xi. Suturing of open wounds
5. **Observation of following procedures**

- i. Circumcision
- ii. Hydrocele
- iii. Hernial repair
- iv. Vasectomy
- v. Haemorrhoidectomy
- vi. Fistulectomy
- vii. Fissurectomy
- viii. Appendectomy
- ix. Cholecystectomy

6. Training of Surgical Emergencies and Management.

Clinical Training (Indoor and Outdoor)

- Shalya (Samanya)
- Shalya (Kshara and Anushastra Karma)
- Asthi and Sandhi Chikitsa (Orthopaedics and Trauma)
- Anaesthesia
- Radiology

09 Months

03 Months (atleast one month in OT)
 03 Months (atleast one month in OT)
 02 Months
 15 days
 15 days

Distribution of Marks

1) Daily records	- 10 Marks
2) Instruments	- 20 Marks
3) Short case	- 10 Marks
4) Long case	- 20 Marks
5) Viva – voce	- 40 Marks
Total	- 100 Marks

Reference Books

1. Sushruta Samhita
2. Ashtanga Sangraha
3. Ashtanga Hridaya
4. Charaka Samhita
5. The Surgical instruments of the Hindus - Girindranath Mukhopadhyaya
6. Shalya Tantra Samuchchaya - Pandit Ramadesh Sharma
7. Shalya Vigyan (Part 1-2) - Dr. Surendra Kumar Sharma
8. Shalya Samanvaya (Part 1-2) - Vd. Anantaram Sharma
9. Shalya Pradeepika - Dr. Mukund Swaroop Verma
10. Sushruti - Dr. Ram Nath Dwivedi
11. Clinical Shalya Vigyan - Dr. Akhilanand Sharma
12. Bhagna Chikitsa - Dr. Prabhakar Janardhan Deshpande
13. Kshara sutra management in anorectal ailments - Dr. S.K. Sharma, Dr. K.R.Sharma and Dr. Kulwant Singh.
14. Anorectal diseases in Ayurveda - Dr. Sijoria and Dr. Praveen Kumar Chowdary.
15. Adhunik Shalya Chikitsa Siddanta - Dr. Katil Narshingham Udupa
16. Agnikarma Technology Innovation - Dr. P.D. Gupta
17. Shalya Tantra Ke Siddhant - Dr. K.K.Takral
18. Recent advances in the management of Arshas / Haemorrhoids - Dr. P. Hemantha

- | | |
|--|--|
| 19. Arsha Evum Bhagander Mein sutra Avacharan | Kumar |
| 20. Kshara Sutra | - Vd. Kanak Prasad Vyas |
| 21. Surgical ethics of Ayurveda | - Dr. S.N.Pathak |
| 22. Bailey and Love's Short Practice of Surgery | - Dr. D.N. Pande |
| | - Norman.S. Williams, Charles.V. Mann and R.C.G. Russell |
| 23. Clinical methods in surgery | - S. Das |
| 24. Textbook of Operative Surgery | - S. Das |
| 25. Shalya Vigyan (Sachitra) | - Anantram Sharma |
| 26. Anushastra Karma | - Dr. D.N. Pande |
| 27. Concept of Vrana is Ayurveda | - Dr. Lakshman Singh |
| 28. Significance for Poorva Karma in Surgical Patient | - Dr. Lakshman Singh |
| 29. Sangyahan Prakash | - Dr. D.N. Pande |
| 30. A concise Text Book of Surgery | - S. Das |
| 31. A manual on Clinical Surgery | - S. Das |
| 32. A System of Surgical Diagnosis | - T.N. Patel |
| 33. A Practical Guide to Operative Surgery | - S. Das |
| 34. Drugs and Equipment for Anaesthesia | - Arun kumar |
| 35. Manual of Surgical Instruments | - M.M. Kapur |
| 36. Ward Procedures | - Patel Mansukh. B |
| 37. Recent trends in the management of Arshas / Haemorrhoids | - Dr. P. Hemantha Kumar |
| 38. Primary Anaesthesia | - Maurice King |
| 39. Synopsis of Anaesthesia | - Lee |
| 40. Clinical Anatomy/ Surgical Anatomy | - John E.Skandalakis |
| 41. Surgical Instruments of the Hindus | - Girindharnath Mukopadyay |
| 42. Outline of Orthopedics | - John Crawford Adams and David Hamblen. L |
| 43. Outline of Fracture | - John Crawford Adams |
| 44. Recent trends in the management of Bhagandara / Fistula-in-ano | - Dr. P. Hemantha Kumar |
| 45. Principles and Practice of Agnikarma | - Dr. Anand Kumar and Dr. Kanchan Shekokar |
| 46. Manipal Manual of Surgery | - Dr. Rajgopal Shenoy |

4.4 SHALAKYA TANTRA

Theory Two Papers – 100 Marks Each
Practical/Viva voce – 100 Marks

NETRA ROGA VIGYAN

Paper I

Marks

100

I. Introduction

- Shalakyatantra nirukti, Parichayam, Ithihasam
- Netra rachana shariram (Mandala, Patala, Sandhi, Drushti Vichara) and Netra Kriya Sharira alongwith modern anatomy of Eye.
- Eye examination and knowledge of basic instruments/equipments required for examination of Eye.
- Netrarognanam – Samanya Hetu (Nija and agantuja), Purvarupa, Samprapti, Rupa and Chikitsa.
- Classification of Netraroga and its importance.

II. Netra Samanya and Vishishta Chikitsa - Kriya Kalpa

- Netra and Chakshu swasthya hitkara Dinacharya, Ritucharya, Aahara evam Vihara.
- Kriya-kalpa-Seka, Aschyotana, Pindi, Vidalaka, Tarpana, Putapaka, Anjana and importance of Panchkarma in Netra Chikitsa.
- Basic fundamentals of Netra Shastra Chikitsa e.g. Purva – Pradhana - Paschat karma, Ama-Pachyaman-Pakva Vrana shotha, Vranitopasana, Pranashtashalya, & Vranbandhana. Methods and concepts of sterilization, asepsis and antisepsis as per ancient and modern point of view.
- Basic applied knowledge of Ashtavidha shastrakarma, agni, kshara, raktamokshana in Netra rogas.
- Essential diagnostic and therapeutic modern pharmacological agents required in Netra Chikitsa

III. Sandhigata Roga(Diseases of junctional areas of eye)

- Number of sandhigata rogas, detailed etiology, pathology, clinical features and management of Pooyalasa and Srava Rogas.
- Brief Study of krimi granthi, Parvani and Alaji Rogas.
- Study of Acute and Chronic Dacryocystitis, Epiphora, Blepharitis including their aetiology, pathology, signs & symptoms, differential diagnosis and medical & surgical management.

IV. Vartmagata Roga(Diseases of Lids)

- Number of vartmagata rogas, and detailed knowledge of etiology, pathology, clinical features and management of Anjananamika, Utsangini, Lagana, Vatahata vartma, Pakshma kopa, Sikta vartma, Pothaki, Klinna vartma, Krichhronmeelana and Kukunaka diseases of Vartma.
- Brief Knowledge of Vartmarbuda, Utklishta vartma, Nimesh, Pakshmeshata, Vartmarsha
- Knowledge of Hordeolum, Ptosis, Trachoma, Trichiasis, Entropion, Ectropion including their Etiology, signs and symptoms differential diagnosis and medical & surgical management.

V. Shuklagata Roga(Diseases of sclera and conjunctiva)

- Number of Shuklagata rogas, detailed knowledge of etiology, pathology, clinical features

- and management of Arma, Arjuna and Shuktika
- b) Brief Knowledge of Sira pidika, Sira jala, Pishtaka, Balasgrathita.
 - c) Study of Pterygium, Scleritis, Episcleritis, Sub-Conjunctival Hemorrhage including their Etiology, signs and symptoms, differential diagnosis and medical & surgical management.

VI. Krishnagata Roga (Diseases of cornea and uvea)

- a) Number of krishnagata rogas, detailed knowledge of Etiology, Pathology, Clinical features, differential diagnosis, complications and Management of Savrana /kshata Shukla (Shukra), Avrana shukra (Shukla)
- b) Brief knowledge of Sira shukla, Akshipaktyaya and Ajakajata.
- c) Knowledge of Corneal ulcer, Corneal Opacity, Uveitis, Acute Iridocyclitis, Staphyloma, their aetiology, pathology, symptoms, differential diagnosis, complications and management.

VII. Sarvagata Roga (Diseases effecting all parts of eye)

- a) Number of Sarvagata rogas, detailed knowledge of etiology, pathology, clinical features, complications, differential diagnosis and Management of Abhishyanda, Adhimantha, Hatadhimantha and Shushkakshipaka.
- b) Brief Knowledge of Amloshit, Vata paryaya, Anyato vata, Sashopha & Ashophakshipaka- Pilla roga, Sirotpata and Siraharsha.
- c) Knowledge of Conjunctivitis, Glaucoma, Dry Eye Syndrome including their etiology, pathology, clinical features, differential diagnosis, complications and their management.

VIII. Drishtigata Roga (vision disorders)

- a) Number of Drishtigata rogas detailed knowledge of - etiology, pathology, clinical features, differential diagnosis and management of Timira, Kacha and Linga nasha.
- b) Brief Knowledge of Abhighataja lingnasha, sanimittaja & Annimittaja Lingnasha Doshandhya/Kaphavidagdha drishti, Naktandhya, Ushna vidagdha drishti, Pittavidagdha drishti, Dhumadarshi, Hriswajadya, Gambhirika, Nakulandhya, Nayanabhighata.
- c) Knowledge of Refractive errors, Cataract including their etiology, pathology, clinical features, differential diagnosis, complications and their management.
- d) Study of Eale's disease, Hypertensive & Diabetic Retinopathies, Age related Macular degeneration, Strabismus, Retinitis pigmentosa, Night blindness, Amblyopia, Central serous retinopathy, Optic Neuritis and Optic atrophy

IX. Miscellaneous Diseases

- a) Xerophthalmia and other malnutritional eye disorders.
- b) Knowledge of ocular trauma and their management.
- c) Introduction to Eye bank, Eye donation, Corneal Transplantation
- d) Preventive Ophthalmology and Community Ophthalmology

SHIRA - KARNA- NASA- MUKHA ROGAS

PAPER II

100 Marks

I Samanya Chikitsa

- a) Study of therapeutic procedures like Sveda, Kavala, Gandusa, Dhuma, Murdhni Taila, Nasya, Pratisarana, Karna Purana, karna prakshalana, nasa prakshalana Mukha Lepa.
- b) Ashtavidha shastrakarma and anushastrakarma used in the treatment of Shira, Karna, Nasa evam Mukha Rogas.

II Shiro Roga

- a) Importance and Superiority of Shira.
- b) Number, general etiology, pathology and cardinal features of shiro rogas and kapalgata rogas along with their common line of management/treatment.
- c) Detailed study of Vataja, Pittaja, Kaphaja shirashoola, Suryavarta, Ardhavabhedaka, Khalitya, Palitya.
- d) Brief Knowledge of Raktaja shiraha shoola, Krimija shiraha shoola, Kshayaja shiraha shoola & Sannipataja shiraha shoola, Ananta vata, Indralupta, Darunaka.
- e) Detailed study of Headache, Migraine its differential diagnosis and treatment.

III Karna Roga

- a) Detailed study of Rachana and Kriyasharir of Karna (Ear) & Shravanendriya as per Ayurvedic and modern view, Examination of Ear along with instruments/equipments required in Ear examination.
- b) Detailed study of etiology, pathology, classification, clinical features and management of diseases of Karna – karna shool, karna nada & shweda, Badhirya, karnastrava, karna pratinaha, pootikarna, karnagoothaka, karnavidradhi.
- c) Brief Knowledge of karna kandu, karnapaka, karnarsha, karnarbuda, krimikaran & karnapali rogas, Karna sandhana (Auroplasty), fundamentals, method and Vaikritpaham
- d) Detailed study of Otagia, ASOM, CSOM, Deafness, wax including their etiology, pathology, clinical features, differential diagnosis, complications and medical & surgical management
- e) Brief Knowledge of Otomycosis, Otosclerosis, Tinnitus, Vertigo, Foreign body in ear and Noise pollution.

IV Nasa Roga

- a) Detailed study of Rachana and Kriyasharir of Nasa (Nose and paranasal sinuses) & Ghranendriya as per Ayurvedic and modern view, Examination of Nose. along with instruments/equipments required in Nose examination.
- b) Detailed study of Pratishyaya, Dushta pratishyaya, Nasanaha, Kshavathu, Nasagata raktapitta & Nasarsha.
- c) Brief Knowledge of Putinasa, Bhranshathu, Peenasa, Apeenasa, Nasarbuda, Nasashotha, Dipta, Nasa Sandhana.
- d) Detailed study of Rhinitis & Sinusitis Epistaxis, Nasal Polyp, DNS, Foreign body including their Etiology, pathology, clinical features differential diagnosis and medical & surgical management.
- e) Brief Knowledge of Nasal trauma, Tumours of nose and Para nasal sinuses.

V Mukha Roga (Diseases of Oral Cavity)

- a) Detailed study of Rachana and Kriyasharir of Mukha Rogaadhithana- oshtha, dantamoola, danta, jivha, talu, gal, sarvasara (Oral cavity) as per Ayurvedic and modern view along with their Basic examination including instruments/equipments required for the examination
- b) Mukha and Danta Swasthya as per ancient and modern concepts including prevention of malignancy of oral cavity.
- c) Number and general aetiology, pathology, cardinal features of Mukha rogas along with their common line of management/treatment.

Oshtha Roga (Diseases of Lips)

- a) Detailed study of Etiology, pathology, classification, clinical features and management of - Oshtha prakopa, khandoshtha
- b) Brief Knowledge of Gandalaji, Jalarbuda, Kshataja Oshthaprakopa
- c) Knowledge of cleft lip.

Dant Mula Gata Roga (Diseases of Periodontia)

- a) Detailed study of Etiology, pathology, classification, clinical features and management of - Shitada, Dantaveshta, Upakush, Danta Nadi, Danta Vidradhi, Adhimansa
- b) Brief Knowledge of dantapupputaka, Saushira, Mahasaushira, Danta Vaidarbha , Paridara, Vardhana.
- c) Detailed study of Etiology, pathology, classification, clinical features and management of Gingivitis, Apical abscess, Periodontitis (Pyorrhoea).

Danta Roga (Dental Diseases)

- a) Detailed study of Etiology, pathology, classification, clinical features and management of Daalan, Krimidanta, Dantaharsha, Danta sharkara, Hanumoksha
- b) Brief Knowledge of karala, Bhanjanak , Kapalika, Shyava Danta, Danta bheda,
- c) Danta chaal, Adhidanta, Danta Utpatana including Jalandhar bandha method and Danta Purna.
- d) Knowledge of Dental Caries, Dental Tartar & Tooth extraction.

Jihva Gata Roga (Diseases of Tongue)

- a) Detailed study of Etiology, pathology, classification, clinical features and management of - jivha kantaka (vataja, pittaja and kaphaja)
- b) Brief Knowledge of Upajihva, Adhijihva, Alasa.
- c) Knowledge of Glossitis, Tongue Tie, Ranula, Benign and Malignant Tumors of tongue.

Talu Roga (Diseases of Palate)

- a) Detailed study of Etiology, pathology, classification, clinical features and management of - Gala shundika, Talushosha, Talupaka
- b) Brief Knowledge of Talupupputa, Adhrusha, Kacchapa, Talvarbuda, Mamsasanghata.
- c) Knowledge of Cleft palate, palatitis, uvulitis and tumours of the palate.

Kantha and Gala gata Roga (Diseases of Pharynx & Larynx)

- a) Detailed study of Etiology, pathology, classification, clinical features and management of - Tundikeri, Kantha shaluka, Gilayu, Galaganda,

- Swrabhedha , Galavidradhi.
- b) Brief Knowledge of Rohini, Galashotha, Kantharbuda, Kanthavidradhi, Galarbuda Galaugham, Vrindam, Ekavrindam, Valaya, balasa , Shataghni, Swaraghna.
 - c) Detailed study of Etiology, pathology, classification, clinical features and management of - Pharyngitis, Laryngitis, Tonsillitis & Adenoiditis
 - d) Brief Knowledge of foreign body in the throat, Carcinoma of Larynx & Pharynx, Dysphagia Diphtheria & diseases of salivary glands.

Sarvasara Mukha Roga (Generalised mucosal affections of the oral cavity)

- a) Detailed study of Etiology, pathology, classification, clinical features and management of Sarvasar mukhapaka
- b) Brief Knowledge of urdhvaguda, putivaktrata, mukharbuda
- c) Detailed Knowledge of Stomatitis.

VI Miscellaneous Diseases

National Programme for Prevention and Control of Deafness.

PRACTICAL

Content of Practical

Identification, Uses, Demonstration of surgical/non-surgical equipment/ instruments, materials used in shalaky chikitsa. Method of sterilization. Training of case taking, bedside clinics and case presentation.

Training in para- surgical procedures-

- 1) Kshara karma
- 2) Agnikarma
- 3) Raktamokshana
- 4) Training of ward procedures. Application of bandages, wound management
- 5) Training of minor procedures (ashtavidha)
- 6) Observation of surgical procedures in Shalaky

Clinical Training

04 Months (OPD, IPD OT and kriya kalpa)

Distribution of marks

- | | |
|---|----------|
| 1) Long Case | 30 Marks |
| 2) Short Case | 20 Marks |
| 3) Identification of instruments
quipments, medicines, etc | 10Marks |
| 4) Viva – voce | 30 Marks |
| 5) Daily Record (Case record) | 10 Marks |

Total

100 Marks

Reference Books:-

- | | |
|--------------------|--------------------------------|
| 1. Shalaky Tantra | Dr. Rama Nath Dwivedi |
| 2. Shalaky Vignyan | Dr. Ravindra Chandra Choudhary |

3. Abhinava Netra Chikitsa
 4. Netra Chikitsa Vigyan
 5. Netra Roga Chikitsa
 6. Netra Roga Vigyan
 7. Parson's Diseases of Eye
 8. Diseases of ENT Log and Turner
 9. Shalaky Tantra
 10. A text book of ophthalmology in Ayurveda
 11. Shalaky Kriya Kalpa Vigyan
- Useful portions of Charak, Sushrut, Vagbhata

Acharya Vishva Nath Dwivedi
Dr. Ravindra Chandra Choudhary
Dr. Munje
Dr. Hans Raj

Shiv Nath Khanna
Dr. P.K.Shantha kumara
Prof. K. S. Dhiman

4.5 Research methodology and Medical statistics

Total Marks 50 (Part A-30 and Part B- 20)

PART – A –Research Methodology

1. Brief historical background of research in Ayurved and contemporary medical science
Evidences of researches in ayurvedic classics
2. Etymology, definitions and synonyms (Anveshana, Gaveshana, Prayeshana, Anusandhan and Shodha) of the word Research
3. Research in Ayurved - Scope, need, importance, utility
4. Types of Research (familiarization of the terms)
 - a) Pure and Applied
 - b) Qualitative , Quantitative and Mixed
Observational and interventional.
5. Research process (Importance of each steps in brief)
 - a. Selection of the topic
 - b. Review of the literature
 - c. Formulation of Hypothesis
 - d. Aims and Objectives
 - e. Materials and methods
 - f. Observations and results
 - g. Methods of communication of Research
6. Research tools – Role of the pramanas as research tools
7. The concept and importance of ethics in research
8. Concept of Evidence Based Medicine and Scientific Writing
9. Importance of IT in data mining and important research data portals concerned with Ayurved and contemporary medical science (DHARA , PubMed, Ayush Research Portal, Bioinformatics Center, Research Management Informatic System etc.)

Part – B Medical-Statistics

1. Definition, scope and importance of the Medical statistics
2. Common statistical terms and notations
 - a. Population
 - b. Sample
 - c. Data
 - d. Variable
 - e. Normal distribution
3. Collection and Presentation of data
 - a. Tabular
 - b. Graphical
 - c. Diagrammatical
4. Measures of location
 - a. Average
 - b. Percentile

Measures of Central Tendency

 - a. Arithmetic mean
 - b. Median

- c. Mode
- 5. Variability and its measurement
 - a. Range
 - b. Standard deviation
 - c. Standard error
- 6. Introduction to probability and test of significance
- 7. Parametric and non parametric tests
- 8. Introduction to commonly used statistical soft-wares.

Reference books for Research methodology :

1. Dawson, Catherine, 2002, Practical Research Methods, New Delhi, UBS Publishers' Distributors
2. Kothari, C.R., 1985, Research Methodology-Methods and Techniques, New Delhi, Wiley Eastern Limited.
3. Kumar, Ranjit, 2005, Research Methodology-A Step-by-Step Guide for Beginners, (2nd.ed), Singapore, Pearson Education
4. Students guide to research methodology – Undergraduates. Alexandria Medical Students Association.
5. Health research methodology. A guide for training in research methods. 2nd edition. Manila, World Health Organization Regional Office for the Western Pacific, 2001.

Reference Books for statistics :

1. Health research methodology. A guide for training in research methods. 2nd edition. Manila, World Health Organization Regional Office for the Western Pacific, 2001.
2. Statistical methods in medical research. P.Armitage (Ed) Oxford Blackwell
3. Statistical methods . Snedecor GW and Cochran, WG
4. Altman, D. G. (1991). Practical statistics for medical research. London: ChapmanPrinciples of Medical Statistics by A. Bradford Hill
5. Interpretation and Uses of Medical Statistics by Leslie E Daly, Geoffrey J Bourke, James MC Gilvray.
6. Research in Ayurveda-M S Baghel
7. research methodology in ayurveda-V.J.Thakar,Gujarat Ayurved University
8. Ayurveda anusandhan paddhati-P.V.Sharma
9. Research methodology methods and statistical techniques- Santosh Gupta. Greenhouse SW.
10. The growth and future of biostatistics: (A view from the 1980s). Statistics in Medicine 2003; 22: 3323–3335.
11. Knapp GR & Miller MC. Clinical epidemiology and Biostatistics, NMS series Antonisamy B, Christopher S & Samuel PP. Biostatistics : Principles and practice
12. Sundara Rao PSS & Richard J. An introduction to Biostatistics, PHI
13. Senn S (1997). Statistical Issues in Drug Development. Chichester: John Wiley & Sons.
14. Methods in Bio-statistics for Medical Students- BK Mahajan
15. Vaidyakeeya Sankhiki Shastra- Dr.S.S.Savrikar

**COURSE CURRICULUM FOR FIRST PROFESSIONAL BAMS
(PRESCRIBED BY NCISM)**



**RACHANA SHARIRA
(SUBJECT CODE- AyUG-RS)
HUMAN ANATOMY**

(Applicable from 2021-22 batch onwards for 5 years or until further notification by NCISM, whichever is earlier)



**BOARD OF AYURVEDA
NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE
NEW DELHI-110058**



Rachana

NCISM

I Professional Ayurvedcharya (BAMS)

Subject Code: AyUG-RS

Rachana Sharir (Human Anatomy)

Summary

AyUG-RS Total number of Teaching hours: 500			
Lecture hours (LH) - Theory		180 Hours	180 Hours (LH)
Paper I	90 Hours		
Paper II	90 Hours		
Non-Lecture hours (NLH) – Theory		80 Hours	320 Hours (NLH)
Paper I	40 Hours		
Paper II	40 Hours		
Non-Lecture hours (NLH) - Practical		240 Hours	

AyUG-RS Examination (Papers & Mark Distribution)					
Item	Theory Component Marks	Practical Component Marks			
		Practical	Viva	Elective	IA
Paper I	100	100	70	--	30
Paper II	100				
Sub-Total	200	200			
Total marks	400				

Preamble

The primary purpose for teaching Rachana sharir to undergraduate students is to provide a thorough understanding of the basic principles of Sharir. Gross and microscopic structure and development of the human body in perspective of ancient and modern sciences, as well as to acquire necessary skills. Sharir in Ayurveda also provides in depth views to concepts like Marma and srotas. Learning of Sharir is most useful in further years in diagnosis and management of the diseases.

Various teaching and learning methods, including didactic, demonstration, tutorial, group discussion, seminars, Integrated Teaching (IT), Problem Based Learning (PBL), and Early Clinical Exposure (ECE), Case-Based Learning (CBL), Virtual Dissection, and cadaveric dissection, are used to transfer knowledge to students, and the syllabus is constructed accordingly. As a result, the students appreciate being a part of the teaching and learning process. This will help the students to become competent, self-assured, caring, and concerned humans capable of providing ethical medical treatment.

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Course Code and Name of Course

	Course code	Name of Course
	AyUG RS	Rachana Sharir (Human Anatomy)

AyUG RS

Table 1- Course learning outcomes and matched PO.

SR1	A1	B1
CO No	Course learning Outcome (CO) AyUG RS At the end of the course AyUG RS, the student should be able to-	Course learning Outcome matched with program learning outcomes.
1	Describe the fundamentals of Rachana Sharir, interpret and analyze it in relevant context and recognize its significance in Ayurveda	PO1, PO2
2	Explain Garbha Sharir and Embryology in Ayurveda and modern science respectively with clinical significance	PO1, PO2
3	Describe and demonstrate all the bones and joints with attachments of associated structures and its clinical application	PO1, PO2
4	Explain the concept of Sira-Dhamani-Strotas, their organization in the human body and its applied aspect	PO1, PO2
5	Identify the Marmas and understand its classification along with its importance in preventive and therapeutic aspect	PO1, PO2
6	Explain and demonstrate the gross anatomy of the organs of various systems and their applied anatomy in perspective of Ayurveda and Modern science	PO1, PO2, PO3
7	Explain the Indriya Sharir and Sensory organs with its application in preventive and therapeutic domain.	PO1, PO2
8	Identify and locate all the structures of body and mark the topography of the living Sharir.	PO1, PO3
9	Respect the cadaver and perform dissection with commitment to reiterate the theoretical aspect of Ayurved Rachana Sharir and contemporary sciences.	PO1, PO3, PO5
10	Describe the basic principles of imaging technologies and identify the anatomical structures in the radiograph	PO1, PO2, PO3

Table 2: Contents of Course AyUG-RS

Paper I					
SN	A2 List of Topics AyUG-RS	B2 Term	C2 Marks	D2 Lecture hours	E2 Non- Lecture hours
1	Shariropkramaniya Shaarira <ul style="list-style-type: none"> Sharir and Shaarir vyakhya (definitions of sharira and sharira) Shadangatvam (Six regions of the body) Anga Pratyanga vibhaga (subdivisions) Sharir shastra vibhag Sharir gyan prayojan and its description in contemporary science with its clinical importance 	I	6	4	2
2	Paribhasha Shaarira <ul style="list-style-type: none"> Kurcha, Kandara, Jala, Asthisamghata, Seemnta, Seevani, Rajju, and lasika Terminologies related shadang sharir 	I	4	3	1
3.	Garbha Shaarira <ul style="list-style-type: none"> Garbha Vyakhya (Definition of Garbha) Concept of Shukra and Artava Garbhavranti. Masanumasik grabhavrudhi Role of panchamahabhoot in Garbhavrudhi Concept of Beeja, Beejabhaga, Beejabhagavayava Garbhposhana Apara nirmiti, Garbhanabhinadi Garbha Angapratyanga utpatti according to different Acharya Garbha Vikruti 	I	15	17	5
4.	Asthi Shaarira Enumeration of Asthi, Types, asthi swaroopa, with its applied aspect	I	4	2	1
5.	Sandhi Shaarira <ul style="list-style-type: none"> Description of Sandhi and its enumeration, Types of Sandhi with its clinical importance Introduction of diseases of Sandhi explained in Ayurveda 	II	4	2	3
6.	Snayu sharir Concept of Snayu and its clinical importance	II	3	2	1
7.	Peshi Shaarira <ul style="list-style-type: none"> Description of Peshi, Utpatti, types, Swaroop, function with its importance 	II	3	2	1
8.	Kesha, Danta, Nakha Sharir <ul style="list-style-type: none"> Description of Panchbhautik swaroop and its applied value Explanation of its swabhava (Pitruja) and its applied value Description of Prakrita (normal) and Vikruta(abnormal) Swaroop (appearance) of kesha, danta, nakha in concern with disease Importance of examination of kesha, danta, nakha 	II	4	2	1

	as diagnostic tool				
9	Embryology <ul style="list-style-type: none"> • Definitions and branches of embryology. • Embryo and Fetus. Sperm and Ovum, Fertilization, Cleavage. • Germ layers formation and their derivatives. • Laws of heredity, Sex determination and differentiation, Month-wise development of embryo. • Fetal circulation, Placenta formation, Umbilical cord formation 	I	5	7	2
10	Osteology <ul style="list-style-type: none"> • Bone: structure, types and ossification. • Description of each bone with clinical anatomy 	I	12	9	6
11	Arthrology <ul style="list-style-type: none"> • Joints: structure, types and movements. • Description of joints of extremities, inter-vertebral joints and temporomandibular joint with their clinical anatomy. 	II	10	10	6
12	Myology <ul style="list-style-type: none"> • Structure and types of muscles. Description of important muscles: origin, insertion, actions, nerve supply and clinical anatomy. • Muscle movements in Yogasana 	II	4	6	2
13	Nervous System <ul style="list-style-type: none"> • Nervous system: Introduction and classification • Meninges • Description of Brain and Spinal cord. • Description of Peripheral Nervous System: Cranial and Spinal nerves, Brachial, Cervical, Lumbar and Sacral nerve plexus, • Anatomical consideration of Autonomic Nervous System, • Formation and circulation of cerebrospinal fluid • Blood supply of Brain and Spinal cord. 	III	14	14	4
14	Endocrinology <ul style="list-style-type: none"> • Description of endocrine glands (Pituitary, Thyroid, Parathyroid, Thymus, Pineal and Suprarenal glands) with clinical aspects. • Histology of all glands. 	III	8	8	3
15	Lymphatic system <ul style="list-style-type: none"> • Introduction Structure included in lymphatic system: Lymph vessels, Lymph nodes, Lymph glands with their clinical importance. 	III	4	2	2

Paper II AyUG-RS					
SN	A2 List of Topics AyUG-RS	B2 Term	C2 Marks	D2 Lecture hours	E2 Non- Lecture hours
1	Pramana Sharira: Anguli pramana & Anjali praman with its applied importance	II	2	2	1
2	Koshtha Evam Ashaya Sharira • Definition of Kostha with its applied importance and • Enumeration of Koshthanga and its description • Concept of Ashaya with its clinical importance	I	4	2	1
3.	Sira Sharir • Concept of Sira • Nirukti, types, enumeration of Sira and its applied aspect • Introduction to Sira vedha	II	4	3	1
4.	Dhamani Sharir • Concept of Dhamani • Nirukti, types, enumeration of Dhamani and its applied aspect	II	2	2	1
5.	Strotas Shaarira • Concept of Strotas • Nirukti, types, number of Srotas, Strotomool and its applied aspect • Types of Strotas and its description. • Applied aspect of Strotas	II	7	8	3
6.	Kala Shaarira • Definition and etymology of Kala • Enumeration and description of Kala • Applied aspect of Kala	III	4	2	2
7.	Indriya Shaarira • Definition of Indriya, Indriya artha and Indriya adhisthan, • Number and importance of Indriya • Description of Gyanendriya, Karmendriya and Ubhayendriya (Manas). • Ayurved sharir of Indriya adhistan- Karna, Twacha, Netra, Jivha, Nasa • Applied aspect of Indriya	III	3	3	1
8.	Twacha Sharir Definition, types and characteristics of Twacha with its clinical importance, significance of Twacha adhisthana in disease manifestation, its relation with Dhatu.	III	3	2	2
9	Marma Sharira • Marma: definition, enumeration, classification, location • Surface demarcation of Marma • Explanation of Trimarma	II	15	13	4

	<ul style="list-style-type: none"> Detail description of Marma with its applied importance. 				
10	Respiratory System <ul style="list-style-type: none"> Bronchial tree and Lungs with their clinical aspects. Respiratory tract: Nasal cavity, Pharynx, Larynx, Trachea Pleura with its clinical aspects Diaphragm and its opening Histology of all organs 	II	10	6	4
11	Digestive system <ul style="list-style-type: none"> Regions of abdomen Organs of digestive tract (alimentary tract) with their clinical aspects. Digestive glands: Liver, Spleen and Pancreas. Description of peritoneum with its clinical aspects Histology of all organs 	I	12	10	6
12	Cardiovascular system <ul style="list-style-type: none"> Description of Heart Structure of artery & vein Importance blood vessels with their course and branches. Pericardium with applied aspect Histology of Heart 	II	8	8	3
13	Urinary System <ul style="list-style-type: none"> Urinary tract: Kidney, Ureter, Urinary Bladder and Urethra with their clinical aspects Histology of all organs 	II	10	8	3
14	Reproductive system <ul style="list-style-type: none"> Male Reproductive system: Reproductive organs, Scrotum and glands (Testis, Prostate and Seminal vesicles) with their clinical aspects. Female reproductive system: Introduction of external genital organ in brief and internal reproductive organs in detail, tract and glands with clinical importance. Histology of all organs 	III	6	7	3
15	Sensory organs Description of structures of Eye, Ear, Nose, Tongue and Skin with their clinical aspects.	III	10	14	5

Table 3: Learning objectives (Theory) of Course AyUG-RS

Paper I RACHANA SHARIR –									
A3 Course outcom e	B3 Learning Objective (At the end of the session, the students should be able to)	C3 Domain/ sub	D3 Must to know/ desirable to know/Ni ce to know	E3 Level Does/ Shows how/ Knows how/ Know	F3 T-L method	G3 Assessment	H3 Formati ve /summa tive	I3 Te rm	J3 Integrat ion
Topic 1- Shariroupkramaniya [Time: Lecture: 04 hours, non-lecture 02 hours] Practical- 02 hours									
CO1	Define Sharir.	Cognitive / Recall	MK	Knows	Lecture	Written / viva-voce/ Open book test	F&S	I	
CO1	Describe the constitutional elements of Sharir	Cognitive/ Comprehensi on	MK	Knows	Lecture	Written/ viva-voce	F&S	I	
CO1	Analyze the Constitutional hierarchy of Sharir and its relevance	Cognitive/ analyze	DK	Knows how	Lecture/ GD	Written / viva-voce	F&S	I	
CO1	Enlist Anga -Pratyanga and specific terms for each Pratyanga	Cognitive/ Recall	MK	Knows	Lecture/ GD	Written/ viva-voce	F&S	I	
CO1	Describe the Importance of Pratyaksha (Demonstration & Dissection) method of learning Sharir	Cognitive - comprehensi on	MK	Knows how	Lecture/ demonstration/ TT/ GD	Written / viva-voce	F&S	I	
CO1	Explain the Mruta Samshodhana as mentioned	Cognitive / Comprehensi on	MK	Knows	Demonstration/ simulation/	Written / viva-voce	F&S	I	

	in Sushruta Samhita and as per the modern science.	Psychomotor							
CO1	Appraise the concept of body donation and its relevance in present scenario	Cognitive - analysis, Affective	NK	Knows	Lecture/ educational video/ SDL	Written / viva-voce	F&S	I	
Topic 2- Paribhasha Sharir [Time: Lecture: 03 hours, non-lecture 01 hours] Practical- 6 hours									
CO1	Explain the terms Kandara, Kurcha, Mamsa, Rajju, Sevani, Jala, Seemant, Asthi Sanghat in context to its enumeration, site and structure.	Cognitive / comprehension	MK	Knows	Lecture/ Demonstration	Written/ viva-voce/ Open book test	F&S	I	
CO1	Evaluate the clinical importance of Kandara, Kurcha, Mamsa, Rajju, Sevani, Jala Seemant, Asthi and Samghat	Cognitive/ Application	DK	Knows how	Lecture/ Demonstration/ SDL	Written/ viva-voce	S	I	
Topic 3- Garbha Sharir [Time: Lecture: 17 hours, non-lecture 05 hours]									
CO 2	Define Garbha and recall the related verse from samhitas.	Cognitive / knowledge	MK	Knows	Lecture/ Recitation	Written/ viva-voce	F & S	I	-
CO 2	Explain the concept of Shukra and recall the related verse from samhitas.	Cognitive / comprehension	MK	Knows	Lecture/ Recitation	Written/ viva-voce	F & S	I	-
CO 2	Explain the concept of Artava and recall the related verse from samhitas.	Cognitive / comprehension	MK	Knows	Lecture/ recitation	Written/ viva-voce	F & S	I	-
CO 2	Describe the role of tridosha and panchamahabhuta in the fetal development	Cognitive / comprehension	MK	Knows how	Lecture/ IT	Written/ viva-voce	F & S	I	Dept. of Streerog Prasuti tantra
CO 2	Explain the concept of Beeja, Beejbhaag, Beejabhagavayava	Cognitive / Comprehension	MK	Knows	Lecture/ GD/ TT	Written/ viva-voce	F & S	I	Dept. of Streerog Prasuti tantra

CO 2	Describe Masanumasik Garbha vriddhi kram and recall the related verse from samhitas.	Cognitive / comprehension	MK	Knows how	Lecture/ Recitation/ demonstration with 3D animated video	Written/ viva-voce/ Open book test	F & S	I	-
CO 2	Describe Garbhaposhana	Cognitive / comprehension	MK	Knows how	Lecture	Written/ viva-voce/ Open book test	F & S	I	-
CO 2	Describe the formation of Apra according to Ayurved	Cognitive / knowledge	MK	Knows, Knows how	Lecture/ demonstration with 3D animated video	Written/ viva-voce/ Open book test	F & S	I	-
CO 2	Describe Garbha nabhinadi	Cognitive / knowledge	MK	Knows	Lecture	Written/ viva-voce	F & S	I	-
CO 2	Explain Angapratyanga utpatti with the related verse from samhitas.	Cognitive / comprehension	MK	Knows how	Lecture/ demonstration with 3D animated video/	Written/ viva-voce/ Assignments/ Open book test	F & S	I	Dept. of Streerog Prasuti tantra
Topic 4- Asthi Shaarira [Time: Lecture: 02 hours, non-lecture 01 hours]									
CO1	Enlist the number of Asthi according to different Acharyas	Cognitive/ Recall	MK	Knows how	Lecture	Written / viva-voce/ Open book test	F & S	I	
CO1	Describe the Asthi Sanghata and Asthi Simanta	Cognitive/ comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	I	
Topic 5- Sandhi Sharir [Time: Lecture: 02 hours, non-lecture 03 hours]									
CO 3	Define the term Sandhi	Cognitive – Recall	MK	Knows	Lecture	Written/ viva-voce	F&S	II	
CO 3	Classify Sandhi into different types.	Cognitive – Recall	MK	Knows	Lecture	Written/ viva-voce/ project work	F&S	II	
CO 3	Demonstrate the movements of Chala Sandhi and	Cognitive – Application	MK	shows	Lecture +	Written/ viva-voce	F&S	II	

	comprehend the structural appearance	Psychomotor			Demonstration thorough model/ simulation				
CO 3	Illustrate the applied aspect of Sandhi and introduction of diseases of Sandhi explained in Ayurveda	Cognitive - Application	DK	Knows how	Lecture/ ECE/ SDL/ Seminar	Written/ viva-voce/ Assignment	F&S	II	Kayachi kitsa
Topic 6- Snayu Sharir [Time: Lecture: 02 hours, non-lecture 01 hours]									
CO 6	Describe Snayu with respect to its definition, structure, types, number, importance with its clinical importance	Cognitive/ comprehension	MK	Knows how	Lecture with demonstration/ SDL/Seminar	Written/ Viva -voce/ Open book test	F&S	II	
Topic 7- Peshi Sharir [Time: Lecture: 02 hours, non-lecture 01 hours]									
CO 5	Describe Peshi Sharir and its classification as per Ayurveda	Cognitive – comprehension	MK	Knows	Lecture/ Demonstration/ SDL/ Seminar	Written/ Viva-voce/ Open book test	F&S	II	
Topic 8- Kesha, Danta, Nakha Sharir [Time: Lecture: 02 hours, non-lecture 01 hours]									
CO 6	Describe Panchabhautik Swaroop, Swabhav (Pitruja) with its applied value in Prakriti and also explain related diseases with importance of examination kesha, danta, nakha as diagnostic tool	Cognitive/ comprehension	MK	Knows how	Lecture with demonstration with 3D animated video/ SDL	Written/ Viva -voce/ Open book test/ Assignment	F&S	II	
Topic 9- Embryology [Time: Lecture: 07 hours, non-lecture 02 hours]									
CO 2	Define embryology and enlist its branches	Cognitive / knowledge / recall	DK	Knows	Lecture	Written/ viva-voce	F & S	I	
CO 2	Define Embryo and Foetus	Cognitive / knowledge / recall	MK	Knows	Lecture	Written/ viva-voce	F & S	I	

CO 2	Describe the anatomical structure of Sperm and Ovum and explain its clinical importance	Cognitive / comprehension	MK	Knows how	Lecture/ Demonstration	Written/ viva-voce/ Assignment	F & S	I	
CO 2	Define term of fertilization	Cognitive / knowledge / recall	MK	Knows	Lecture/ Seminar	Written/ viva-voce	F & S	I	
CO 2	Describe the process of cleavage	Cognitive / comprehension	MK	Knows how	Lecture/ Educational 3D Animated videos	Written/ viva-voce	F & S	I	--
CO 2	Explain the process of germ layer formation and its derivatives	Cognitive / comprehension	MK	Knows how	Lecture/ Educational 3D Animated videos	Written/ viva-voce	F & S	I	Dept. of Streerog Prasuti tantra
CO 2	Explain the laws of heredity	Cognitive / comprehension	MK	Knows how	Lecture/ Seminar	Written/ viva-voce	F & S	I	Dept. of Streerog Prasuti tantra
CO 2	Describe the process of sex determination and differentiation	Cognitive / comprehension	NK	Knows how	Lecture/ Seminar	Written/ viva-voce	F & S	I	--
CO 2	Explain the month wise development of Foetus	Cognitive / comprehension	MK	Knows how	Lecture/ Demonstration	Written/ viva-voce/ Open book test/ Project work	F & S	I	Dept. of Streerog Prasuti tantra
CO 2	Explain foetal circulation and the changes in the circulation after birth	Cognitive / comprehension	MK	Knows how	Lecture/Demonstration	Written/ viva-voce	F & S	I	--
CO 2	Describe Placenta formation & its structure with applied anatomy	Cognitive / application	MK	Knows how	Lecture/ Seminar/ ECE	Written/ viva-voce	F & S	I	Dept. of Streerog Prasuti tantra
CO 2	Describe Umbilical cord with clinical importance	Cognitive / knowledge / application	MK	Knows how	Lecture/ Seminar/ ECE	Written/ viva-voce	F & S	I	Dept. of Streerog Prasuti tantra

Topic 10- Osteology [Time: Lecture: 09 hours, non-lecture 06 hours] Practical- 20 hours									
CO3	Explain skeleton and its importance	Cognitive/ comprehension	MK	knows	Lecture/ Demonstration/ Seminar	Written / viva-voce	F & S	I	
CO3	Describe the uses of bones	Cognitive/ comprehension	MK	Knows	Lecture	Written / viva-voce	F & S	I	
CO3	Describe and demonstrate the processes and depressions of various bones	Cognitive/ comprehension, Application	MK	Show how	Lecture / Demonstration	Written / viva-voce	F & S	I	
CO3	Describe the characteristics of the bones	Cognitive/ comprehension	MK	Knows	Lecture	Written / viva-voce	F & S	I	
CO3	Describe the development and ossification of bones	Cognitive/ comprehension	DK	Knows how	Lecture	Written / viva-voce	F & S	I	
CO3	Describe and demonstrate Cranial bones and its applied anatomy	Cognitive / comprehension, Application	MK	Shows how	Lecture/ Demonstration	Written / viva-voce	F & S	I	
CO3	Describe and demonstrate Facial bones and its applied anatomy	Cognitive / comprehension, Application	DK	Shows how	Lecture/ Demonstration	Written / viva-voce	F & S	I	
CO3	Describe and demonstrate pelvic bones and its applied anatomy	Cognitive / comprehension, Application	MK	Shows how	Lecture/ Demonstration	Written / viva-voce	F & S	I	
CO3	Describe and demonstrate vertebral column and its applied anatomy	Cognitive / comprehension, Application	MK	Shows	Lecture/ Demonstration	Written / viva-voce	F & S	I	
CO3	Describe and demonstrate thorax bones and its applied anatomy	Cognitive / comprehension	MK	Shows how	Lecture/ Demonstration	Written / viva-voce	F & S	I	

		on, Application							
CO3	Describe & demonstrate Clavicle and Scapula and its applied anatomy	Cognitive / comprehension, Application	MK	Shows how	Lecture/ Demonstration	Written / viva-voce	F & S	I	Kayachi kitsa
CO3	Describe Phalanges, Carpal and Tarsal Bones and its applied anatomy	Cognitive / comprehension	DK	Knows	Lecture/ Demonstration	Written/ viva-voce	F & S	I	
CO3	Describe & demonstrate bones of the upper & lower extremity and its applied anatomy	Cognitive / comprehension, Application	MK	Shows how	Lecture/ Demonstration	Written / viva-voce/ Project work	F & S	I	
CO3	Describe & demonstrate Patella and its applied anatomy	Cognitive / comprehension, Application	DK	Shows	Lecture/ Demonstration	Written / viva-voce	F & S	I	
CO10	Recognize and describe the Radiological structures in radiograph	Cognitive / comprehension, Application	MK	Shows	Lecture/ Demonstration/ PBL/ ECE/ SDL	Written / viva-voce/ Project work/ Assignment	F & S	I	
Topic 11- Arthrology [Time: Lecture: 10 hours, non-lecture 06 hours] Practical- 8 hours									
CO 3	Recall the classification of Joints	Cognitive – Recall	MK	Knows	Lecture	Written/ viva-voce	F&S	II	
CO 3	Demonstrate movements of Synovial Joints and comprehend the structural aspect helping in movements.	Cognitive – Application Psychomotor	MK	Knows how	Lecture/ Demonstration/ Simulation	Written/ viva-voce	F&S	II	
CO 3	Describe constitutional anatomy of joint	Cognitive – Comprehension	MK	Knows	Lecture	Written/ viva-voce	F&S	II	
CO 3	Describe joints of upper limb and lower limb region, TM joint, and its related applied aspect	Cognitive – Application	MK	Knows how	Lecture/ PBL/ ECE	Written/ viva-voce/ Open book test/ Assignment	F&S	II	Kaychikitsa

CO 3	Demonstrate the examination of synovial joints	Psychomotor	MK	Knows + Shows	Demonstration with case presentation in relative aspect/ ECE/ SDL/ 3D Animated videos	Written/ viva-voce/ Practical performance	F&S	II	Rognidan
Topic 12- Myology [Time: Lecture: 06 hours, non-lecture 02 hours] Practical- 8 hours									
CO5	State the types of muscles.	Cognitive – application Psychomotor	MK	Knows	Lecture	Written/ Viva-voce	F & S	II	
CO5	Describe and demonstrate the muscles of upper and lower extremity with their origin, insertion, action & nerve supply and applied aspect and its role in Yogasana	Cognitive – application	MK	Shows	Lecture/ Demonstration/ GD/TT/ SDL/ 3D Animated videos	Written/ Viva-voce/ Open book test/ Project work	F & S	II	Swasthvrit ta
CO5	Describe and demonstrate muscles of thorax and abdomen with their origin, insertion, action & nerve supply and applied aspect and its role in Yogasana	Psychomotor	MK	Shows	Lecture/ Demonstration/ GD/TT/ SDL/ 3D Animated videos	Written/ Viva-voce/ Open book test/ Project work	F & S	II	Swasthvrit ta
CO5	Describe and demonstrate muscles of back with origin, insertion, action & nerve supply and applied aspect and role in Yogasana	Cognitive – application	DK	Shows	Lecture/ Demonstration/ GD/TT/ SDL/3D Animated videos	Written/ Viva-voce/ Open book test/ Project work	F & S	II	Swasthvri tta
Topic 13- Nervous System [Time: Lecture: 14 hours, non-lecture 04 hours] Practical- 12 hours									
CO6	Explain the hierarchy of structural unit	Cognitive-/ comprehensi on	MK	Knows	Lecture/ Demonstration	Written/ viva-voce	F&S	III	
CO6	Describe the functional and structural division of the nervous system	Cognitive- comprehensi on	MK	Knows how	Lecture/ Seminar	Written/ viva-voce	F&S	III	

CO6	Explain the parts of Brain (Cerebrum, Cerebellum)	Cognitive – comprehension	MK	Knows, Knows how	Lecture/ Demonstration	Written/ viva-voce/ Open book test	F&S	III	
CO6	Describe external and internal features of Spinal cord.	Cognitive – comprehension	MK	Knows, Knows how	Lecture/ Demonstration/ 3D animated videos	Written/ viva-voce/ Open book test	F&S	III	
CO6	Illustrate the Blood supply of Brain and Spinal cord.	Cognitive – comprehension	MK	Knows, Knows how	Lecture/ Demonstration/ 3D animated videos	Written/ viva-voce/ Open book test	F&S	III	
CO6	Describe the external features of diencephalon Mid brain, Pons, Medulla oblongata.	Cognitive-Comprehension	DK	Knows	Lecture/ Demonstration/ 3D animated videos	Written/ viva-voce/ Open book test	F&S	III	
CO6	Describe the limbic system	Cognitive-Comprehension	NK	Knows	Lecture/ Demonstration/ 3D animated videos	Written/ viva-voce/ Open book test	F&S	III	
CO6	Describe the general Sulci and gyri of cerebrum and determine the clinical importance of Broadman's classification	Cognitive – application	MK	Knows Knows how	Lecture/ Demonstration/ 3D animated videos	Written/ viva-voce/ Open book test	F&S	III	
CO6	Describe the ascending, descending pathways, upper motor neurons and lower motor neurons, its applied aspect in examination of nervous system	Cognitive/ application Affective /responding	DK	Knows how	Lecture/ Demonstration/ CBL, ECE	Written/ viva-voce/ Open book test	F&S	III	Kaya chikitsa
CO6	Demonstrate the superficial and deep reflexes and its clinical importance	Cognitive /application Psychomotor /perception Affective /responding	DK	shows	Lecture + Demonstration though living object/ ECE/ PBL/ SDL/ CBL	Viva-Voce/ Practical performance	F&S	III	Kayachi kitsa

CO6	Recall the general anatomical consideration of ANS	Cognitive/ Recall	MK	Knows	Lecture/ SDL	Written	F&S	III	
CO6	Describe the cranial and spinal nerves along with formation of nerve plexuses and applied anatomy	Cognitive / Application	DK	Knows how	Lecture/ PBL/ ECE/ SDL	Written / viva-voce/ Assignment	F & S	III	
CO6	Describe the Formation and circulation of cerebro- spinal fluid	Cognitive/ comprehension	MK	Knows how	Lecture	Written / viva-voce	F&S	III	
Topic 14- Endocrinology [Time: Lecture: 08 hours, non-lecture 03 hours] Practical- 02 hours									
CO 6	Define Endocrine Glands and enlist them	Cognitive/ Recall	MK	Knows	Lecture	Written / viva-voce	F & S	III	
CO 6	Describe Structure and Functions of Endocrine Glands	Cognitive-/ Comprehension	MK	Knows	Lecture	Written / viva-voce	F & S	III	
CO 6	State the location, Dimension & Shape of Pituitary	Cognitive/ Recall	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	III	
CO 6	Describe the Parts & subdivisions of Pituitary	Cognitive / comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	III	
CO 6	Describe the Blood Supply, Nerve Supply & Lymphatic drainage of Pituitary	Cognitive /comprehension	MK	Knows	Lecture/ Demonstration/ CBL	Written / viva-voce	F & S	III	
CO 6	Enlist the hormones secreted by Pituitary, & histology and discuss its clinical anatomy.	Cognitive/ Application	MK	Knows	Lecture/ Demonstration/ GD	Written / viva-voce/ Open book test	F & S	III	
CO 6	State the location, Dimension & Shape of Thyroid gland	Cognitive/Recall	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	III	
CO 6	Describe the lobes, border & surfaces of Thyroid gland with its relation.	Cognitive /comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	III	
CO 6	Describe the blood supply, nerve Supply & lymphatic drainage of Thyroid gland	Cognitive /comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	III	

CO 6	List the Hormones secreted by Thyroid gland and & histology, and discuss its clinical application	Cognitive - Application	MK	Knows	Lecture/ GD/ CBL	Written / viva-voce/ Open book test	F & S	III	
CO 6	Describe the location, Shape, Dimensions and structure of Parathyroid gland	Cognitive /comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	III	
CO 6	Describe the Blood Supply, Nerve Supply & Lymphatic drainage of Parathyroid gland	Cognitive /comprehension	DK	Knows	Lecture Demonstration	Written / viva-voce	F & S	III	
CO 6	List the hormones secreted by parathyroid, & histology and discuss its Clinical anatomy	Cognitive /Application	DK	Knows	Lecture/ GD/ CBL	Written / viva-voce/ Open book test	F & S	III	Kayachik itsa
CO 6	State the location, Shape & dimension of Suprarenal gland	Cognitive / Recall	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	III	
CO 6	Describe the Surface, Borders of Suprarenal gland along with its relation.	Cognitive/comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	III	
CO 6	List the Functions and Secretions of Suprarenal gland	Cognitive /Recall	MK	Knows	Lecture	Written / viva-voce	F & S	III	Sharir Kriya
CO 6	Describe the Blood Supply, Nerve Supply & Lymphatic drainage of Suprarenal gland	Cognitive /comprehension	DK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	III	
CO 6	Describe the Internal structure of suprarenal gland	Cognitive /comprehension	DK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	III	
CO 6	Write the Clinical & applied anatomy & histology of Suprarenal gland	Cognitive /application	DK	Knows	Lecture/ CBL	Written / viva-voce/ Open book test	F & S	III	Kayachik itsa
Topic 7- Lymphatic System [Time: Lecture: 02 hours, non-lecture 02 hours]									

CO 6	Define Lymphatic System	Cognitive / Recall	MK	Knows	Lecture	Written / viva-voce	F & S	III	
CO 6	Describe components of Lymphatic System	Cognitive / comprehension	MK	Knows	Lecture	Written / viva-voce	F & S	III	
CO 6	Describe the anatomical structure of Various Lymph Vessels i.e. Lymphatic Trunks, Thoracic Duct etc and explain its clinical importance	Cognitive / comprehension, Application	MK	Knows how	Lecture/ Demonstration/ CBL	Written / viva-voce	F & S	III	
CO 6	Describe the anatomical structure of Lymph Glands i.e. Lymph Nodes, Spleen, Thymus, Tonsils etc and explain its clinical importance	Cognitive / comprehension, Application	MK	Knows how	Lecture/ Demonstration/ ECE/ CBL	Written / viva-voce/ Open book test	F & S	III	Rognidan Evum Vikriti Vigyan
Paper II									
Topic 1- Praman sharir [Time: Lecture: 02 hours, non-lecture 01 hours]									
CO1	Describe Anguli and Anjali praman with its significance.	Cognitive Comprehension	MK	Knows	Lecture/ Demonstration/ GD	Written/ Viva-voce/ Open book test	F & S	II	
Topic 2- Koshtha Evam Ashaya Shaarira [Time: Lecture: 02 hours, non-lecture 01 hours]									
CO1	Define of Koshtha and Ashaya	Cognitive/ knowledge	MK	Knows	Lecture	Written/ viva-voce/ Open book test	F&S	I	
CO1	Describe the concept of various numbers of Koshthanga as per Samhitas	Cognitive/ Comprehension	MK	Knows	Lecture	Written/ viva-voce/ Open book test	F&S	I	
CO1	Describe the concept of various Numbers of Ashaya as per Samhitas	Cognitive/ Comprehension	MK	Knows	Lecture/ TT/ GD	Written/ viva-voce/	F&S	I	

						Open book test			
CO1	Describe and explain applied aspects of Koshtha and Ashaya.	Cognitive/ Comprehensiv e application	NK	Knows How	Lecture/ GD/ ECE	Written/ viva-voce/ Assignments/ Open book test	F&S	I	Kayackit sa
Topic 3- Sira sharir [Time: Lecture: 03 hours, non-lecture 01 hours]									
CO 4	Define Sira, Enumerate the sira & state its Nirukti	Cognitive /Recall	MK	Knows	Lecture/ Seminar	Written / viva-voce/ Open book test	F & S	II	
CO 4	Explain the classification of Sira	Cognitive / Comprehension	MK	Knows how	Lecture	Written / viva-voce/ Open book test	F & S	II	
CO 4	Define Vedhya Sira and Enumerate Vedhya Sira	Cognitive /Recall	MK	Knows	Lecture/ GD	viva-voce/ Open book test	F & S	II	
CO 4	Define Avedhya sira and Enumerate the Avedhya Sira	Cognitive / Recall	MK	Knows	Lecture	Written / viva-voce/ Open book test	F & S	II	
CO 4	Locate the Vedhya Sira in the body according to region	Cognitive / application Psychomotor	MK	Shows	Lecture/ Demonstration/ IT	viva-voce/ Practical performance	F & S	II	Shalyatan tra
CO 4	Describe the applied aspect of Siravedha	Cognitive - application	DK	Knows how	Lecture/ ECE/ IT/ CBL	Written / viva-voce/ Assignment / Open book test	F & S	II	Shalyatan tra
Topic 4- Dhamani Sharir [Time: Lecture: 02 hours, non-lecture 01 hours]									
CO 4	Define Dhamani, and state its Nirukti	Cognitive/ Recall	MK	Knows	Lecture/ Seminar	Written / viva-voce/ Open book test	F & S	II	

CO 4	Explain the classification of Dhamani	Cognitive/Comprehension	MK	Knows how	Lecture/ Seminar	Written / viva-voce/ Open book test	F & S	II	
CO 4	Locate the Dhamani in the body according to region	Cognitive / application Psychomotor	DK	Shows	Lecture/ Demonstration	Viva-voce/ Practical performance	F & S	II	
Topic 5- Srotasa Sharir [Time: Lecture: 08 hours, non-lecture 03 hours]									
CO 4	Define Srotasa and state its Nirukti and types	Cognitive/ Recall	MK	Knows	Lecture/ Seminar	Written / viva-voce/ Open book test	F & S	II	
CO 4	Explain the Classification of Srotasa	Cognitive / Comprehension	MK	Knows	Lecture/ Seminar	Written / viva-voce/ Open book test	F & S	II	
CO 4	State the Moolsthana of all Srotasa as per Acharya Sushrut and Charak and its clinical aspect	Cognitive / Recall	MK	Knows how	Lecture/ Seminar/ ECE	Written / viva-voce/ Assignment/ Open book test	F & S	II	Kayachikitsa/ Panchakarma
Topic 6- Kala Sharir [Time: Lecture:02 hours, non-lecture 02 hours] Practical- 03 hours									
CO1	Define Kala and explain the formation & functions of seven Kala	Cognitive –/ comprehension	MK	Knows	Lecture/ Seminar	Written / viva-voce/ Open book test	F&S	III	
CO1	Describe Saptakalas with its applied aspect	Cognitive /comprehension +application	MK	Knows	Lecture/ demonstration/ ECE	Written / viva-voce/ Open book test	F&S	III	Agadtantra
CO1	Relate the Sapta Kala with Sapta Dhatu	Cognitive – application + affective - awareness	NK	Knows how	Lecture/ Seminar/ IT	Written / viva-voce	F&S	III	
Topic 7- Indriya Sharir [Time: Lecture: 03 hours, non-lecture 01 hours]									

CO 7	Define Indriya. Interpret derivation of Indriya and explain its importance.	Cognitive / comprehension	MK	Knows	Lecture/ Seminar	Written / viva-voce/ Open book test	F & S	III	
CO 7	State the meaning of Indriya- artha and Indriya- adhishthan	Cognitive / knowledge	MK	Knows	Lecture/ Seminar	Written / viva-voce/ Open book test	F & S	III	
CO 7	Enlist Dnyanendriyas, Karmendriyas and Ubhayendriya	Cognitive / knowledge	MK	Knows	Lecture/ Seminar	Written / viva-voce/ Open book test	F & S	III	
CO 7	Illustrate classical description of Dnyanendriya Adhishthan – Karna, Twak, Netra, Jivha, Nasa with its clinical perspective	Cognitive / application	MK	Knows how	Lecture/ IT/ ECE/ PBL	Written / viva-voce/ Open book test/ Assignment	F & S	III	Dept. of Shalaky atantra
Topic 8- Twacha Sharir [Time: Lecture: 02 hours, non-lecture 02 hours]									
CO 7	Define Twacha, its types and characteristics with its clinical importance, significance of twacha adhishthana in disease manifestation, its relation with dhatu	Cognitive/ comprehension	MK	Knows how	Lecture with demonstration with 3D animated video/ ECE/ SDL	Written/ Viva -voce/ Open book test	F&S	III	
Topic 9- Marma Sharir [Time: Lecture: 13 hours, non-lecture 04 hours] Practical- 12 hours									
CO 5	Define Marma and enumerate the Marmas	Cognitive – Recall	MK	Knows	Lecture/ Seminar	Written / viva-voce/ Open book test	F&S	II	
CO 5	Describe the Marma and Prana tatva with its Significance	Cognitive – Comprehension	MK	Knows	Lecture	Written / viva-voce/ Open book test	F&S	II	

CO 5	Discuss the classification of Marma	Cognitive – Comprehension	MK	Knows	Lecture/ ECE/ PBL	Written / viva-voce/ Open book test	F&S	II	
CO 5	Narrate the importance of marma in Sharir and Shalya vigyan	Cognitive – application	MK	Knows how	Lecture/ ECE/ PBL	Written/ Open book test	F&S	II	Shalyat antra
CO 5	Illustrate the specific location of Marma as per Sushruta Samhita	Cognitive – Comprehension	MK	Knows + Shows	Lecture/ Demonstration/ Workshop	Written / viva-voce/ Open book test	F&S	II	
CO 5	Demonstrate the Marma location as per modern anatomy	Cognitive – Application Psychomotor	MK	Knows + Shows	Lecture with 3D animated demonstration/ Seminar/ Workshop	Viva-voce/ Practical performance	F&S	II	Panchakarma
Topic 10- Respiratory system [Time: Lecture: 06 hours, non-lecture 04 hours] Practical- 10 hours									
CO6	Enlist the parts of the Bronchial tree	Cognitive / Recall	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	State the location and dimension of Lungs	Cognitive - Knowledge	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	Differentiate between Right and left Lungs	Cognitive -/ comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	Describe the Borders, Surfaces and lobes of the Lungs	Cognitive/ comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce/ Open book test	F & S	II	
CO6	Explain the root of Lungs	Cognitive /comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	Explain the Bronchopulmonary segments of the lungs	Cognitive /comprehension	DK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	Describe the Blood supply, Nerve supply, Lymphatics of the Lungs	Cognitive /comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	

CO6	Describe histology and Clinical Anatomy of Lungs	Cognitive / application	MK	Knows how	Lecture/ ECE/ PBL	Written / viva-voce/ Assignment	F & S	II	Kaychik ita
CO6	State the extent and features of Trachea	Cognitive / Recall	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	Explain the Relations of Trachea	Cognitive – /comprehension	MK	Knows how	Lecture/ Demonstration	Written / viva-voce/ Open book test	F & S	II	
CO6	Describe the Blood supply, Nerve supply and Lymphatics of Trachea	Cognitive /comprehension	MK	Knows how	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	Explain the histology and Clinical anatomy of Trachea	Cognitive /Application	MK	Knows how	Lecture/ ECE/ PBL	Written / viva-voce/ Assignment	F & S	II	Shalaky atantra
CO6	State the extent of Larynx and its external features	Cognitive / Recall	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	Enlist the paired and unpaired cartilages of Larynx	Cognitive / Recall	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	Explain the relations of Larynx	Cognitive /comprehension	DK	Knows how	Lecture/ Demonstration	Written / viva-voce/ Open book test	F & S	II	
CO6	Write the blood supply, nerve supply and lymphatics of Larynx	Cognitive /comprehension	DK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	Explain the histology and clinical anatomy of Larynx	Cognitive / application	DK	Knows how	Lecture/ Demonstration	Written / viva-voce/ Assignment	F & S	II	
CO6	State the location of Pleura and enlist its parts	Cognitive/ Recall	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	Describe the parts of parietal Pleura	Cognitive/ comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce	F & S	II	
CO6	Explain the Pulmonary ligaments and recesses of Pleura	Cognitive /comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce/	F & S	II	

						Open book test			
CO6	Describe the blood supply, nerve supply, lymphatics of Pleura	Cognitive /comprehension	DK	Knows how	Lecture	Written / viva-voce	F & S	II	
CO6	Explain the clinical anatomy of Pleura	Cognitive – Application	DK	Knows how	Lecture/ ECE/ PBL	Written / viva-voce/ Assignment	F & S	II	Kayachikitsa
Topic 11- Digestive system [Time: Lecture: 10 hours, non-lecture 06 hours] Practical- 22 hours									
CO 6	Describe peritoneum and nine parts of abdomen	Cognitive – application	MK	Knows	Lecture/ Demonstration	Written/ Viva-voce/ Open book test/ Assignment	F & S	I	
CO 6	Describe the anatomy of the Oesophagus with relations, histology and clinical anatomy	Cognitive – application	MK	Knows	Lecture/ Demonstration	Written/ Viva-voce/ Open book test/ Assignment	F & S	I	
CO 6	Describe the structure of the Stomach, Stomach bed, the interior, histology, blood supply with relations and clinical anatomy	Cognitive – application	MK	Knows	Lecture/ Demonstration/ PBL/ ECE/ IT	Written/ Viva-voce/ Open book test/ Assignment	F & S	I	
CO 6	Describe the structure of the Duodenum with relations, histology and clinical anatomy.	Cognitive – application	MK	Knows	Lecture/ Demonstration/ ECE/ PBL/ IT	Written/ Viva-voce/ Open book test/ Assignment	F & S	I	
CO 6	Describe the parts, structure, histology and clinical anatomy of Large intestine.	Cognitive – application	MK	Knows how	Lecture/ Demonstration	Written/ Viva-voce/ Open book test/ Assignment	F & S	I	
CO 6	Describe the anatomy of the Rectum, Peritoneal &	Cognitive – application	MK	Knows how	Lecture/	Written/	F & S	I	

	visceral relations and applied anatomy of the Rectum.				Demonstration/ ECE/ PBL/ IT	Viva-voce/ Open book test/ Assignment			
CO 6	Describe the anatomy and musculature of the anal canal, histology with its blood supply, venous drainage and applied anatomy	Cognitive – application	MK	Knows how	Lecture/ Demonstration	Written/ Viva-voce/ Open book test/ Assignment	F & S	I	
CO 6	Describe the structure of the Pancreas, Pancreatic ducts, applied anatomy, along with histology of endocrine & exocrine part.	Cognitive – application	MK	Knows how	Lecture/ Demonstration/ ECE/ PBL/ IT	Written/ Viva-voce/ Open book test/ Assignment	F & S	I	
CO 6	Describe external features, anatomy histology and clinical anatomy of Liver	Cognitive – application	MK	Knows how	Lecture/ Demonstration/ ECE/ PBL/ IT	Written/ Viva-voce/ Open book test/ Assignment	F & S	I	
CO 6	Describe the structure, peritoneal & visceral relations histology and applied anatomy of the Spleen.	Cognitive – application	MK	Knows how	Lecture/ Demonstration/ ECE/ PBL/ IT	Written/ Viva-voce/ Open book test/ Assignment	F & S	I	
CO 6	Enlist the salivary glands and describe the anatomy of Parotid gland, Submandibular gland and Sublingual gland with its & Clinical anatomy	Cognitive – application	DK	Knows how	Lecture/ Demonstration	Written/ Viva-voce/ Open book test/ Assignment	F & S	I	
Topic 12- Cardiovascular System [Time: Lecture: 08 hours, non-lecture 03 hours]									
CO 6	Describe pericardium with its clinical anatomy	Cognitive – application	MK	Knows how	Lecture/ Demonstration	Written/ Viva-voce	F & S	II	
CO 6	Describe external features of the Heart.	Cognitive – recall	MK	Knows	Lecture/ Demonstration	Written/	F & S	II	

						Viva-voce/ Open book test/ Assignment			
CO 6	Describe internal features of the chambers, valve and auscultatory areas of Heart and its applied anatomy	Cognitive – application	MK	Knows how	Lecture/ Demonstration/ ECE/ PBL/ IT	Written/ Viva-voce/ Open book test/ Assignment	F & S	II	
CO 6	Describe the major arteries and veins of Heart.	Cognitive – Recall	MK	Knows	Lecture/ Demonstration	Written/ Viva-voce	F & S	II	
CO 6	Describe the histology and applied anatomy of Heart.	Cognitive – application	MK	Knows how	Lecture/ Demonstration/ ECE/ PBL/ IT	Written/ Viva-voce/ Open book test/ Assignment	F & S	II	
Topic 13- Urinary System [Time: Lecture: 08 hours, non-lecture 03 hours] Practical- 04 hours									
CO 6	Enlist the components of Urinary System	Cognitive / Recall	MK	Knows	Lecture	Written / viva-voce	F & S	II	
CO 6	Describe the anatomical structure of Kidney, Ureter, Urinary bladder, Urethra	Cognitive / Comprehension	MK	Knows	Lecture/ Demonstration	Written / viva-voce/ Open book test/ Assignment	F & S	II	Kayachik itsa /Panchkar ma/Shala ya-Tantra
CO 6	Explain histology and clinical anatomy of Kidney, Ureter, Urinary bladder, Urethra and its importance	Cognitive / Comprehension & Application	MK	Knows how	Lecture/ Demonstration/ ECE/ PBL/ IT	Written / viva-voce/ Open book test/ Assignment	F & S	II	
CO 6	Enlist developmental anomalies of Kidney, Ureter, Urinary bladder, Urethra	Cognitive / Recall	NK	Knows	Lecture	Written / viva-voce/ Open book test/ Assignment	F & S	II	
Topic 14- Reproductive System [Time: Lecture: 07 hours, non-lecture 03 hours] Practical-02 hour									

CO 6	Enlist the anatomical structures of male reproductive system and discuss its Ayurved Sharir	Cognitive / Comprehension	MK	knows how	Lecture	Written / viva-voce/ Open book test	F & S	III	
CO 6	Describe the male reproductive organs – Testes, Scrotum, Epididymis, Ductus deference, Ejaculatory duct, penis, Spermatic cord with histology and applied aspect	Cognitive / application	MK	knows how	Lecture	Written / viva-voce/ Open book test	F & S	III	
CO 6	Enlist the anatomical structures of female reproductive system and discuss its Ayurved Sharir.	Cognitive / Comprehension	MK	knows how	Lecture/ Seminar	Written / viva-voce/ Open book test	F & S	III	
CO 6	Describe external female reproductive organs	Cognitive / Comprehension	MK	knows	Lecture/ Seminar	Written / viva-voce	F & S	III	
CO 6	Explain Internal reproductive organs in detail with histology and its applied anatomy (Uterus, Fallopian tube, Cervix, Vagina, Ovary)	Cognitive / application	MK	knows how	Lecture/ ECE/ PBL/ IT	Written / viva-voce/ Open book test/ Assignment	F & S	III	
CO 6	Explain histology of Uterus, Fallopian tube, Cervix, Vagina, Ovary	Cognitive / application	DK	knows how	Lecture/ Demonstration	Written / viva-voce/ Open book test/ Assignment	F & S	III	
Topic 15- Sensory organ [Time: Lecture: 14 hours, non-lecture 05 hours]									
CO7	Explain five sensory receptors, hierarchy of development of five senses and need of five senses	Cognitive - comprehension	MK	Knows how	Lecture with 3D animated demonstration	Written / viva-voce/ Open book test/ Assignment	F&S	III	
CO7	Describe structural aspect of five sensory organ	Cognitive – comprehension	MK	Knows	Lecture	Written / viva-voce/ Open book	F&S	III	

						test/ Assignment			
CO7	Describe the pathways of each sense in understanding of its functional anatomy	Cognitive - comprehension	NK	Knows how	Lecture with 3D animated demonstration/ ECE/ PBL/ IT	Written / viva-voce/ Open book test/ Assignment	F&S	III	
CO7	Determine Method of examination, tool of examination and Importance of sensory organ in systemic examination	Cognitive - comprehension + Psychomotor	DK	Knows + Shows	Lecture with practical demonstration of tools/ ECE/ PBL/ IT	Written / viva-voce/ Open book test/ Assignment	F&S	III	Shalaky dept. Kaya chikitsa dept

***MK-Must Know, DK- Desirable to Know, NK- Nice to Know, TT- Tutorial, GD- Group Discussion, PBL- Problem Based Learning, IT- Integrated Teaching, ECE- Early Clinical Exposure, SDL- Self Directed Learning, CBL- Case Base Learning (P)- Practical**

List of Practicals AyUG-RS

Marks: 200

Hours: 240

SN	Name of Practical	Term	Hours
P1	<ul style="list-style-type: none">• Branches of anatomy. History of Anatomy• Ethics in dissection hall	I	2
P2	<u>Anatomical Terminologies</u> Anatomical position, Planes, and explanation of anatomical terms related to skin, fasciae, bones, joints and their movements, muscles, ligaments, tendons, blood vessels, nerves.	I	4
P3	Preservation methods of the cadaver, Mrut sharir Samshodhan <ul style="list-style-type: none">• Different methods of preservation techniques. Brief introduction of chemical composition of preservative fluid.	I	2
P4	Introduction of Anatomy Act and Brief detailing about Bio medical waste management act 1960	I	2
P5	Shava vichhedana – detailed dissection of the whole body <ul style="list-style-type: none">• Line of incision• Dissection technique• Identification of different tools and its Uses• Identification and characteristics of Different layers and its relation	I	32
	<u>In Extremities:</u> Dissection of extremities & Identification of related structures	II	40
	<u>In Trunk region:</u> Demonstration of visceral relation of thoracic, abdominal and pelvic organ	II	38
	<u>In Head Region:</u> Dissection of head, Identification of Meninges, Major Sulci and gyri, Superficial origin of Cranial Nerve and and venous Sinus.	III	14
	Dissection of sensory organs	III	22
P6	<ul style="list-style-type: none">• Practical study of vital organs, Histological slides• Identification of external features of thoracic, abdominal and pelvic viscera	II	06
P7	Practical study of bones	I	36

	Identification of external features of bones and different attachment		
	<p>Surface and Radiological anatomy</p> <p><u>In Radiology Anatomy:</u> Characteristics of radio imaging film and detailing about its color contrasting</p> <p>Identification of Normal alignment of bodily structure – X ray film</p> <ol style="list-style-type: none"> Chest X Ray – A.P And P.A view Detailing of A.P view of Shoulder joint, Elbow Joint, Wrist joint, Hip joint, knee joint, Ankle joint. Identification of basic clinical finding through X ray film related to long bones and joints 	III	22
P8	<p><u>In Surface Anatomy Section:</u></p> <ul style="list-style-type: none"> Identification of Underlying viscera of Nine region based upon Cadaveric and Living Anatomy Surface marking of thoracic, abdominal and pelvic viscera 	III	6
P9	<p>Practical study of Marma</p> <p>Surface markings of all Marma points and its anatomical demarcation.</p>	III	12
P10	<p>Brief detailing about body donation, organ donation and its awareness</p> <p>(Communication skills)</p>	III	2

***Note: one practical should not be less than 2 hrs.**

Table 4: Learning objectives (Practical) of AyUG- RS

A4 Course outcome	B4 Learning Objective (At the end of the session, the students should be able to)	C3 Domain/s ub	D3 Must to know/ desirabl e to know/N ice to know	E3 Level Does/ Shows how/ Knows how/ Know	F4 T-L method	G4 Assessment	H4 Form ative /sum mative	I4 Te rm	J4 Integration
Practical 1- Definition and branches of anatomy. History of Anatomy [Time: Practical or other activity - 02 hours]									
CO1	Define and describe branches of anatomy and its history	Cognitive / knowledge / recall	MK	Know	Lecture/ Tutorial	Written +viva-voce	F&S	I	
CO9	Practice of ethics in the context of human dissection	Cognitive / knowledge / recall/ Affective/ psychomot or	MK	Knows Shows	Tutorial/ Demonstration	viva-voce	F&S	I	
Practical 2- Anatomical Terminologies [Time: Practical- 2 hours and other activity 2 hours]									
CO1	Demonstrate anatomical position, Planes, and explanation of anatomical terms related to skin, fasciae, bones, joints and their movements, muscles, ligaments, tendons, blood vessels, nerves.	Cognitive / knowledge / recall	MK	Knows	Tutorial/ Demonstration/ Simulation	Written +viva-voce/ Open book test/ Assignments	F&S	I	

Practical 3- Preservation methods of the cadaver, Mrut sharir Samshodhan [Time: Practical or other activity - 02 hours]									
CO9	Describe and demonstrate preservation methods of the cadaver and Mrut sharir Samshodhan	Cognitive / knowledge / recall	MK	Knows, Shows	Tutorial/ Demonstration	Written +viva-voce	F&S	I	
CO9	Describe the different methods of preservation techniques and give brief introduction of chemical composition of preservative fluid.	Cognitive / knowledge / recall	MK	Knows	Tutorial/ Demonstration	Written +viva-voce, spotting, OSPE	F&S	I	
Practical 4- Introduction of Anatomy Act and Brief detailing about Bio medical waste management act 1960 [Time: Practical or other activity - 02 hours]									
CO9	Describe and follow the Anatomy Act and Bio medical waste management act 1960	Cognitive - comprehension, Affective/ psychomotor	NK	Knows, know how, Shows	Lecture/ Tutorial/ Demonstration	Written +viva-voce/ Practical performance/ Public awareness	F&S	I	
Practical 5- Shava vichhedana – detailed dissection of the whole body [Time: Practical- 126 hours and other activity 20 hours]									
CO9	Demonstrate the line of incision, dissection technique, different tools and their uses	Cognitive / knowledge / recall	MK	Knows/ Shows/ Shows How	Tutorial/ Demonstration / Cadaveric dissection	Written +viva-voce, spotting, OSPE	F&S	I	
CO9	Identify and characteristics of Different layers and its relation	Cognitive / knowledge / recall	DK	Knows	Tutorial/ Demonstration / Simulations /	Written +viva-voce, spotting, OSPE	F&S	I	

					Cadaveric dissection				
CO9	Identify and demonstrate muscles of extremities and its related structures	Cognitive / knowledge / recall	DK	Knows, Shows	Tutorial/ Demonstration / Cadaveric dissection	Written +viva-voce	F&S	II	
CO6	Describe and demonstrate the visceral relation of thoracic and abdominal organ	Cognitive - comprehension + psychomotor	DK	Knows, Shows	Demonstration / Simulations / Cadaveric dissection	Written +viva-voce, spotting, OSPE/ Practical performance	F&S	II	
CO6	Describe and demonstrate surface identification of parts of brain, major sulci and gyri, superficial origin of cranial nerve and meninges and venous sinus.	Cognitive - comprehension + psychomotor	MK	Knows, Shows	Demonstration / Simulations/ Cadaveric dissection	Written +viva-voce, spotting, OSPE/ Practical performance	F&S	III	
CO6	Describe, dissect and demonstrate the sensory organs	Cognitive - comprehension + psychomotor	MK	Knows, Shows	Demonstration / Simulations/ Cadaveric dissection	Written +viva-voce, spotting, OSPE/ Practical performance	F&S	III	
Practical 6- Practical study of vital organs, Histological slides and identification of external features of thoracic and abdominal viscera									
[Time: Practical- 04 hours and other activity 02 hours]									
CO6	Focus the histological slides of identified organs	Cognitive / knowledge / recall	DK	Knows	Tutorial/ Demonstration	Written +viva-voce spotting, OSPE	F&S	II	
CO6	Describe and demonstrate the	Cognitive - comprehension +	MK	Knows Shows	Demonstration	Written +viva-voce, spotting,	F&S	II	

	external features of thoracic and abdominal viscera	psychomotor				OSPE/ Practical performance			
Practical 7- Practical study of bones [Time: Practical- 30 hours or other activity 06 hours]									
CO3	Describe and demonstrate external features of bones and muscle attachments	Cognitive - comprehension + psychomotor	MK	Knows, Shows	Demonstration / Simulations	Written +viva-voce, spotting, OSPE/ Practical performance	F&S	I	
CO10	Describe the characteristics of radio imaging film and difference in color contrasting	Cognitive / knowledge / recall	DK	Knows	Tutorial/ Demonstration / Simulations	Written +viva-voce spotting, OSPE	F&S	I	
Practical 8- Surface and Radiological anatomy [Time: Practical- 20 hours and other activity 08 hours]									
CO10	Describe and demonstrate the normal alignment of chest X Ray – A.P And P.A view	Cognitive - comprehension + psychomotor	MK	Knows, Shows	Tutorial/ Demonstration	Written +viva-voce, spotting, OSPE/ Practical performance	F&S	III	
CO10	Describe and demonstrate the normal alignment of A.P view of Shoulder joint, Elbow Joint, Wrist joint, Hip joint, knee joint, Ankle joint	Cognitive - comprehension + psychomotor	MK	Knows, Shows	Tutorial/ Demonstration	Written +viva-voce, spotting, OSPE/ Practical performance	F&S	III	
CO10	Identify the basic clinical finding through X ray film	Cognitive - comprehension +	NK	Knows, Shows	Tutorial/ Demonstration	Written +viva-voce, spotting, OSPE/	F&S	III	Kaychikitas, Shalyatantra

	related to long bones and joints	Psychomot or				Practical performance			
CO8	Describe and demonstrate underlying viscera of Nine region based upon cadaveric and Living Anatomy	Cognitive - comprehension + psychomot or	DK	Knows, Shows	Tutorial/ Demonstration	Written +viva-voce, spotting, OSPE/ Practical performance	F&S	III	
CO8	Describe and demonstrate surface marking of thoracic and abdominal viscera	Cognitive - comprehension + psychomot or	DK	Knows, Shows	Tutorial/ Demonstration	Written +viva-voce, spotting, OSPE/ Practical performance	F&S	III	
Practical 9- Practical study of Marma [Time: Practical or other activity - 12 hours]									
CO5, CO8	Describe and demonstrate surface markings of Marma points and its anatomical demarcation of all Marma as per Shadang sharir	Cognitive - comprehension + psychomot or	MK	Knows + Shows	Tutorial/ Demonstration / Cadaveric dissection	Written +viva-voce, spotting, OSPE/ Practical performance	F&S	III	Panchakarma
Practical 10- Body donation, organ donation and its awareness [Time: Practical or other activity - 02 hours]									
CO9	Describe body donation and organ donation process with respect to specific organ and its awareness Demonstrate process of communication	Affective/ psychomot or	DK	Knows, know how, Shows	Tutorial/ Demonstration	Written +viva-voce/ Public awareness/ social work	F&S	III	Shalyatantra and Shalakyatantra
		Psychomot oe	MK		Role Play			III	

	process in awareness speech or counselling for Body donation.								
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Table 5: Non-Lecture Activities Course AyUG-RS

1	List non lecture Teaching-Learning methods	No of Activities (Values in hours)
a	Seminar / Workshop	14
b	Tutorial (TT) / Group Discussion (GD)	14
c	Problem based learning (PBL)	8
d	Integrated teaching (IT)	8
e	Early Clinical Exposure (ECE)/ Case Base Learning (CBL)	18
f	Self-Directed Learning (SDL) / Summary writing	12
g	Field visit	6
		80
2	Practical (refer Table 4)	240
	Total	320

Other Educational Activities(Additional):

- Field visit (community/anatomy museum) - II & III term
- Practical journal – II & III term
- Summary/ Essay writing (Research papers/Samhitas literature review)- II or III term

Table 6: Assessment Summary

6 A - Number of Papers and Marks Distribution

S.No.	Subject Code	Papers	Theory	Practical/Clinical Assessment					Grand Total
				Practical/ Clinical	Viva	Electives	IA	Sub Total	
1.	AyUG-RS	2	200	100	70	-	30	200	400

6 B - Scheme of Assessment (formative and Summative) AyUG-RS

SR.NO.	PROFESSIONAL COURSE	DURATION OF PROFESSIONAL COURSE		
		First Term (1-6 Months)	Second Term (7-12 Months)	Third Term (13-18 Months)
1	First	3 PA & First TT	3 PA & Second TT	3 PA & UE

PA: Periodical Assessment; TT: Term Test; UE: University Examinations

6 C - Calculation Method for Internal assessment Marks (30 Marks) AyUG-RS

TERM	PERIODICAL ASSESSMENT*					TERM TEST**	TERM ASSESSMENT	
	A	B	C	D	E	F	G	H
	1 (15 Marks)	2 (15 Marks)	3 (15 Marks)	Average (A+B+C/3)	Converted to 30 Marks (D/15*30)	Term Test (Marks converted to 30)	Sub Total /60 Marks	Term Assessment (..../30)
FIRST							E+F	(E+F)/2
SECOND							E+F	(E+F)/2
THIRD						NIL		E
Final IA	Average of Three Term Assessment Marks as Shown in 'H' Column.							
	Maximum Marks in Parentheses *Select an Evaluation Methods which is appropriate for the objectives of Topics from the Table 6 D for Periodic assessment. Conduct 15 marks assessment and enter marks in A, B, and C. ** Conduct Theory (100 Marks) [MCQ (20*1 Marks), SAQ (8*5), LAQ (4*10)] and Practical (100 Marks) Then convert to 30 marks.							

6 D - Evaluation Methods for Periodical Assessment

S. No.	Evaluation Methods for Periodical Assessment
1.	Practical / Clinical Performance
2.	Viva Voce, MCQs, MEQ (Modified Essay Questions/Structured Questions)
3.	Open Book Test (Problem Based)
4.	Summary Writing (Research Papers/ Samhitas)
5.	Class Presentations; Work Book Maintenance
6.	Problem Based Assignment
7.	Objective Structured Clinical Examination (OSCE), Objective Structured Practical Examination (OPSE), Mini Clinical Evaluation Exercise (Mini-CEX), Direct Observation of Procedures (DOP), Case Based Discussion (CBD)
8.	Extra-curricular Activities, (Social Work, Public Awareness, Surveillance Activities, Sports or Other Activities which may be decided by the department).
9.	Small Project
10.	Other activities explained in Table 3 Column G3 as per indicated term and objective of the topic.

6 E - Paper Layout

I PROFESSIONAL BAMS EXAMINATIONS

AyUG-RS

PAPER-1

Time: 3 Hours Maximum Marks: 100

INSTRUCTIONS: All questions compulsory

TOTAL MARKS 100

		Number of Questions	Marks per question	Total Marks
Q 1	Multiple Choice Questions (MCQ)	20	1	20
Q 2	Short answer questions (SAQ)	8	5	40
Q 3	Long answer questions (LAQ)	4	10	40
				100

I PROFESSIONAL BAMS EXAMINATIONS

AyUG-RS

PAPER-1I

Time: 3 Hours Maximum Marks: 100

INSTRUCTIONS: All questions compulsory

TOTAL MARKS 100

		Number of Questions	Marks per question	Total Marks
Q 1	Multiple Choice Questions (MCQ)	20	1	20
Q 2	Short answer questions (SAQ)	8	5	40
Q 3	Long answer questions (LAQ)	4	10	40
				100

6 F – I - Distribution of Theory exam AyUG- RS

	Paper I	A List of Topics	B Term	C Marks	D Type of Questions “Yes” can be asked. “No” should not be asked.		
					MCQ (1 Mark)	SAQ (5 Marks)	LAQ (10 Marks)
1	Shariropkramaniya Shaarira		I	Refer Next table	Yes	Yes	No
2	Paribhasha Shaarira		I		Yes	Yes	No
3.	Garbha Shaarira		I		Yes	Yes	Yes
4.	Asthi Shaarira		I		Yes	Yes	Yes
5.	Sandhi Shaarira		II		Yes	Yes	Yes
6.	Snayu sharir		II		Yes	Yes	No
7.	Peshi Shaarira		II		Yes	Yes	No
8.	Kesha, Danta, Nakha Sharir		II		Yes	Yes	No
9	Embryology		I		Yes	Yes	Yes
10	Osteology		I		Yes	Yes	Yes
11	Arthrology.		II		Yes	Yes	Yes
12	Myology		II		Yes	Yes	No
13	Nervous System.		III		Yes	Yes	Yes
14	Endocrinology		III		Yes	Yes	No
15	Lymphatic system		III		Yes	No	No

	Paper II	A List of Topics	B Term	C Marks	D Type of Questions “Yes” can be asked. “No” should not be asked.		
					MCQ (1 Mark)	SAQ (5 Marks)	LAQ (10 Marks)
1	Pramana Shaarira:		II	Refer Next Table	Yes	No	No
2	Koshtha Evam Ashaya Shaarira		I		Yes	Yes	Yes
3.	Sira Sharir		II		Yes	Yes	Yes
4.	Dhamani Sharir		II		Yes	Yes	Yes
5.	Strotas Shaarira		II		Yes	Yes	Yes
6.	Kalaa Shaarira		III		Yes	Yes	Yes
7.	Indriya Shaarira		III		Yes	Yes	Yes
8.	Twacha Sharir		III		Yes	Yes	Yes
9	Marma Shaarira		II		Yes	Yes	Yes
10	Respiratory System		II		Yes	Yes	No

11	Digestive system	I		Yes	Yes	Yes
12	Cardiovascular system	II		Yes	Yes	Yes
13	Urinary System	II		Yes	Yes	No
14	Reproductive system	III		Yes	Yes	No
15	Sensory organs	III		Yes	Yes	Yes

6 F – II - Theme table

Paper-I:

Theme*	Topics	Term	Marks	MCQ	SAQ	LAQ
A	1) Shariropakramaniya 2) Paribhasha Sharir	I	10	YES	YES	NO
B	3) Garbha Sharir 9) Embryology	I	20	YES	YES	YES
C	4) Asthi Sharir 10) Osteology	I	16	YES	YES	YES
D	8) Kesh, Dant, Nakha Sharir 7) Peshi Sharir 12) Myology	II	11	YES	YES	NO
E	5) Sandhi Sharir 6) Shayu Sharir 11) Arthrology	II	17	YES	YES	YES
F	13) Nervous System	III	14	YES	YES	YES
G	14) Endocrinology 15) Lymphatic	III	12	YES	YES	YES
*Theme: is group of similar topics in Ayurved Sharir and Anatomy. Used in 6G question paper blue print						

Paper-II

Theme	Topics	Term	Marks	MCQ	SAQ	LAQ
A	2) Koshta Evam Ashay Sharir 11) Digestive system	I	16	YES	YES	YES
B	1) Praman Sharir 9) Marma Sharir	II	17	YES	YES	YES
C	3) Sira Sharir 4) Dhamani Sharir 5) Strotas Sharir 12) Cardiovascular System	II	21	YES	YES	YES
D	10) Respiratory System	II	10	YES	YES	NO
E	13) Urinary System	II	10	YES	YES	NO
F	14) Reproductive System	III	6	YES	YES	NO
G	6) Kala Shair 7) Indriya Sharir 8) Twacha Sharir 15) Sensory organs	III	20	YES	YES	YES

**6 G Question paper Blue print for AyU-RS:
PAPER-I**

A Question Sr. No	B Type of Question	C Question Paper Format (Refer table 6 F 2 Theme table for themes)
Q1	<p>Multiple choice Questions (MCQ)</p> <p>20 Questions</p> <p>1 mark each</p> <p>All compulsory</p> <p>Must know part: 15 MCQ Desirable to know: 3 MCQ. Nice to know: 2 MCQ</p>	<ol style="list-style-type: none"> 1. Theme a 2. Theme a 3. Theme a 4. Theme a 5. Theme a 6. Theme b 7. Theme b 8. Theme b 9. Theme b 10. Theme b 11. Theme c 12. Theme d 13. Theme e 14. Theme e 15. Theme f 16. Theme f 17. Theme f 18. Theme f 19. Theme g 20. Theme g
Q2	<p>Short answer Questions (SAQ)</p> <p>Eight Questions</p> <p>5 Marks Each</p> <p>All compulsory</p> <p>Must know part: 7 SAQ Desirable to know: 1 SAQ Nice to know: Nil</p>	<ol style="list-style-type: none"> 1. Theme a 2. Theme b 3. Theme c 4. Theme d 5. Theme d 6. Theme e 7. Theme g/f 8. Theme g/f
Q3	<p>Long answer Questions (LAQ)</p> <p>Four Questions</p> <p>10 marks each</p> <p>All compulsory</p> <p>All questions on must know No Questions on Nice to know and Desirable to know</p>	<ol style="list-style-type: none"> 1. Theme b 2. Theme c 3. Theme e 4. Theme f/g

PAPER-II

Question Sr. No		SET
Q1	<p>Multiple choice Questions (MCQ)</p> <p>20 Questions</p> <p>1 mark each</p> <p>All compulsory</p> <p>Must know part: 15 MCQ Desirable to know: 3 MCQ. Nice to know: 2 MCQ</p>	<ol style="list-style-type: none"> 1. Theme a 2. Theme b 3. Theme b 4. Theme c 5. Theme c 6. Theme c 7. Theme c 8. Theme c 9. Theme c 10. Theme d/e 11. Theme d/e 12. Theme d/e 13. Theme e/d 14. Theme e/d 15. Theme f 16. Theme g 17. Theme g 18. Theme g 19. Theme g 20. Theme g
Q2	<p>Short answer Questions (SAQ)</p> <p>Eight Questions</p> <p>5 Marks Each</p> <p>All compulsory</p> <p>Must know part: 7 SAQ Desirable to know: 1 SAQ Nice to know: Nil</p>	<ol style="list-style-type: none"> 1. Theme a 2. Theme b 3. Theme c 4. Theme d/e 5. Theme e/d 6. Theme e/d 7. Theme f 8. Theme g
Q3	<p>Long answer Questions (LAQ)</p> <p>Four Questions</p> <p>10 marks each</p> <p>All compulsory</p> <p>All questions on Must to know No Questions on Nice to know and Desirable to know</p>	<ol style="list-style-type: none"> 1. Theme a 2. Theme b 3. Theme c 4. Theme g

6 H - I - Distribution of Practical Exam

Practical 100 Marks + (Viva 70 + IA 30) Marks

SN	Heads	Marks
1	Spotting (Refer Table 6 H II below)	20
3	Kostha Ashay Sharir, Dissected organs and histology slides	20
4	Ashti, Sandhi, Peshi, Bones and Joints,	20
5	Marma Sharir, Surface & Radiological anatomy	20
6	Practical record (15 Marks) and Communication Skill (5 Marks)	20
7	Viva-Voce (Objective Structured) (Refer table 6 H – III)	70
8	Internal assessment	30
	Total Marks	200

6 H - II Practical Spot examination Questions – (20 marks)

SN	Question	Mark allotment
Topic- Garbha/Sira/Kala		
1	Identify the structure & give the Drushtant/ Metaphor related with it. e.g.- Gunja Phala- Artava, Spatik-Shukra, etc	Identification- 1 Drushtant- 1
Topic- Marma		
1	Identify the Marma & write its type as per Parinama & Rachana	Identification- 1 Type-1
2	Identify the Marma & write its Pariman & any two anatomical structures related to the Marma	Identification- 0.5 Pariman – 0.5 Anatomical structure - 1
3	Identify the Marma & write its applied aspect	Identification- 1 Viddha-1
Topic- Bones, Muscles		
1	Identify the bone & write its peculiarities (Any 2) e.g.- Atlas vertebra	Identification- 0.5 Peculiarities- 1.5
2	Identify the indicated part on the bone & write its attachment (Any 2) e.g., Scapula spine	Identification- 1 Attachment- 1
3	Identify the side of the given bone & write side determination points	Side identification- 0.5 Points- 1.5
4	Identify the side of the given bone & write its applied anatomy (Any 2 points)	Identification-1 Applied -1
5	Write the type of the given bone as per Ayurved & Modern science e.g., Tibia- Nalakasthi, long bone	Ayu. Type- 1 Modern type- 1
6	Identify the indicated muscle on the bone & write whether it originates or inserts there	Muscle identification- 1 Origin/insertion- 1
7	Identify the indicated muscle & write its action (Any 2)	Identification- 1 Action-1
8	Identify the indicated muscle & write its blood supply/nerve supply	Identification-1

		Supply-1
9	Identify the indicated muscle & write its applied anatomy	Identification-1 Applied -1
10	Identify the bone and write any two processes	Identification-1 Processes -1
11	Identify the bone and write any two angles	Identification-1 Angle -1
12	Identify the bone and write any one peculiarity related to gender e.g., Hip bone, Clavicle, Sacrum	Identification-1 Peculiarities- 1
Topic- Joints		
1	Identify the joint & write its ligaments (Any 3)	Identification- 0.5 Ligaments- 1.5
2	Identify the joint & write names of actions occurring there (Any 3)	Identification- 0.5 Actions- 1.5
3	Identify the joint & write the type of joint as per Ayurved & Modern science	Identification- 1 Ayu. Type- 0.5 Modern type- 0.5
4	Identify the joint & write its clinical anatomy (Any two)	Identification- 1 Clinical anatomy-1
5	Identify the joint & write its relation (Any two)	Identification- 1 Relation -1
6	Identify the joint & write the movements along with the muscle	Identification- 1 Movement -0.5 Muscle – 0.5
Topic- Organs		
1	Identify the organ & write name of the Srotas related to it	Identification- 1 Srotas-1
2	Identify the organ & write name of the kala related to it	Identification- 1 Kala-1
3	Identify the organ & write its Utpatti as per Ayurved	Identification- 1 Utpatti-1
4	Identify the organ & write its visceral impressions (Any 3)	Identification- 0.5 Impressions-1.5
5	Identify the organ & write its blood/nerve supply	Identification- 0.5 Supply-1.5
6	Identify the organ & write its borders (Any two)	Identification- 1 Borders -1
7	Identify the organ & write its surfaces (Any two)	Identification- 1 Borders -1
8	Identify the organ & write its applied anatomy (Any 3 points)	Identification-0.5 Applied -1.5
Topic- Radiology		
1	Identify the X-ray & write the structures seen in it (Any 3)	Identification- 0.5 Structures-1.5
2	Identify the view of the X-ray & write the marked structures (Any two)	Identification- 1 Structures-1
Topic- Central Nervous System/ Sense organs		
1	Name the lobes of the given organ e.g., cerebrum	Each lobe – 0.5 Total -2

2	Identify the sense organ & write its nerve supply e.g., tongue	Identification- 1 Supply-1
3	Identify the marked structure and write its applied aspect (Any two)	Identification- 1 Applied aspect-1

6 H - III Viva Voce (70 Marks)

Recall Questions	Comprehension Questions	Application Questions
40 Marks	20 Marks	10 Marks
1. Sira-Dhamani-Strotas 2. Shariropakramaniya Sharir 3. Paribhasha Shaarir 4. Praman Shaarira 5. Anatomical terminologies 6. Kalaa Sharir 7. Indriya Sharir & Sensory organ 8. Reproductive system	1. Nervous system 2. Endocrine system 3. Lymphatic system 4. Cardiovascular system 5. Urinary system	1. Garbha Sharir, 2. Embryology 3. Respiratory system 4. Digestive system
e.g., Definition, types, numbers, planes, parts, Shlokas, etc.	e.g., Relations, Blood supply, Nerve Supply, Venous & Lymphatic drainage, etc.	e.g., Applied anatomy, Clinical anatomy, Surgical anatomy, Congenital anomalies etc.

7. Reference and Resources

1. Parishadhya Shabdarth Sharir
2. Pratyaksha shaririram
3. Sharisthana of all Samhita
4. Sushrut Samhita Sharirshtana- Dr. Bhaskar Govind Ghanekar
5. Brihat Shariram Vaidyaratna- P.S. Varrier
6. Abhinava Shariram- Acharya Damodar Sharma Gaur
7. Manava Sharir (Revised Edition)- Prof. Dinkar Govind Thatte
8. Sharir Rachana Vigyan (English)- Vaidya P.G. Athawale
9. Manual of Practical Anatomy Cunnigham Practical Manual Vol-1, Vol-2, Vol-3
10. Clinical Anatomy in Ayurveda - Prof. D.G. Thatte & Prof. Suresh Chandra
11. Ayurvedic Human Anatomy - Prof. Dr. Giridhar M. Kanthi
12. Sharir Rachana Vigyan Vol I & II- Dr. Sunil Kumar Yadav
13. Regional Anatomy - B. D. Chaurasia
14. Rachana Sharir Vigyana - Dr. Mahendra Sing
15. Relevant chapters of Brihtrayee and Laghuthrayee
16. Gray's Anatomy
17. Text Book of Human Anatomy- Inderbir Singh
18. Clinical Anatomy- Richard S Snell
19. Fundamentals of Human Anatomy- Dr. Chakraborty
20. Human Osteology - Poddar
21. A Handbook of Anatomical Terminology, Dr. Nidhi Shrivastava, Dr. Ravi Kumar Shrivastava, Dr. Rakesh Kumar Sharma.

**COURSE CURRICULUM FOR FIRST PROFESSIONAL BAMS
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**SAMSKRITAM EVAM AYURVED ITHIHAS
(SUBJECT CODE-AyUG-SN & AI)
SANSKRIT AND HISTORY OF AYURVEDA
(Applicable from 2021-22 batch onwards for 5 years or until further
notification by NCISM, whichever is earlier)**



प्राणाभिसरः प्राणायतनानाम्

**BOARD OF AYURVEDA
NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE
NEW DELHI-110058**



Sanskritam

NCISM
I professional Ayurvedcharya
(BAMS)

SAMSKRITAM EVAM AYURVED ITIHAS
(SUBJECT CODE-AyUG-SN & AI)
SANSKRIT AND HISTORY OF AYURVEDA
(Applicable from 2021-22 batch onwards for 5 years or until further
notification by NCISM, whichever is earlier)

Summary

AyUG-SN & AI			
Total number of Teaching hours: 300			
Lecture hours (LH) – Theory		100 Hours	100 Hours (LH)
Paper I	50 Hours		
Paper II (Sanskrit 40+ AI 10)	50 Hours		
Non-Lecture hours (NLH) – Theory		140 Hours	200 Hours (NLH)
Paper I	74 Hours		
Paper II (Sanskrit 46+ AI 20)	66 Hours		
Non-Lecture hours (NLH) – Practical		60 Hours	

Examination (Papers & Mark Distribution)					
Item	Theory Component Marks AyUG-SN & AI	Practical Component Marks			
		Practical	Viva	Elective	IA
Paper I	100 Sanskrit 100 Marks	--	75*	10 (Set-FA)	15
Paper II	100 Sanskrit 80 Marks and Ayurved Itihas 20 Marks				
Sub-Total	200	100			
Total marks	300				
*Viva voce examination shall be for Sanskrit and not for Ayurved Ithihasa					

Preface

Sanskrit is an ancient still most scientific language of India. The ancient literature created about various subjects in this region is in Sanskrit. The richness of Sanskrit language is accepted by intellectuals across the world. The literature of Ayurveda is also found in Sanskrit. Without understanding the language of the science, it is really hard to read and understand the terminologies, theories, principles of the science given in the Samhitas. Many of the students coming for the course partly introduced or not at all introduced to the Sanskrit language previously. Hence for understanding Ayurveda in its originality, Sanskrit is one of subject in First year BAMS curriculum. Similar to any language Listening, Reading, Writing and Speaking are the four pillars of a Sanskrit. Reading, writing and understanding samhitas will be emphasized and listening and speaking can give confidence to the student and enhance the study.

Learning a language just by studying the theory is not enough hence curriculum of Sanskrit is designed by combining traditional Sanskrit teaching with new teaching health science education technologies.

This changed curriculum involves many new teaching learning techniques and assessment methods. Based on the course outcomes, curriculum is divided in papers. Important objectives are appropriately planned as per domains of learning. Supported by interactive methods of teaching and learning by using Audio-visual aids. There will be practicals and demonstrations based on Language Lab activities for enhancement of practical use of Sanskrit. Practical can give a chance of acquiring skills by practice of use of Sanskrit in Samhitadhyayan. Application of learned Sanskrit will be practically ensured by reading newly introduced Ashtang Hrudayam. Students can experience of application of Sanskrit Grammar in Samhitadhyayan. Introduction to Niruktis, dictionaries and Shabdakoshas can motivate students to derive and understand meanings from Sanskrit verses on their own. As this is a language, learning to communicate in this language is very much essential. Addition of Sanskrit communication as a part of curriculum is for overcoming the fear of learning a new language.

History of Ayurved is also added in second part of the Sanskrit. As an ancient science, its gradual development. Important milestones, different Schools of thoughts, important traditions, followers in traditions, their contribution etc will be introduced in History. Contribution of Scholars of modern era, Important institutes and globalization are few more points for history. Activity based learning and objective assessment are the most important changes to change perception towards study of history.

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Course Code and Name of Course

	Course code	Name of Course
	AyUG SN & AI	Sanskrit and Ayurved Itihas

AyUG SN & AI Course

Table 1- Course learning outcomes and matched PO.

SRI	A1	B1
CO No	Course learning Outcome (CO) AyUG SN & AI At the end of the course AyUG SN & AI, the student should be able to-	Course learning outcomes matched with program learning outcomes.
Sanskrit		
CO1	Read and recite Prose (गद्यः) and poem (पद्यः) with the appropriate accent (उच्चारणस्थानानि तथा बाह्याभ्यन्तरप्रयत्नानि). उच्चारणस्थानानां बाह्यभ्यन्तरप्रयत्नानां च सहाय्येन पाठने तथा लेखने सामर्थ्यम्	PO-5, PO-6, PO-7, PO-8, PO-9
CO 2	Apply various Technical Terms in Ayurveda (परिभाषाशब्दाः), Nouns & Pronouns (नामरूपाणि तथा सर्वनामरूपाणि), Verbs (धातुरूपाणि), suffixes (प्रत्ययाः), Grammatical Terms (संज्ञा), Syntax (संधी) and Compounds (समासाः) from Sanskrit Grammar for enhanced interpretation of Ayurveda texts (आयुर्वेद संहिताः). परिभाषाशब्देषु नामरूपेषु सर्वनामरूपेषु क्रियापदेषु प्रत्ययेषु संज्ञासु सन्धिषु समासेषु च ज्ञानं तद्द्वारा आयुर्वेदसंहितासु अर्थावबोधनम् प्रायोगिकविज्ञानञ्च	PO-5, PO-7, PO-9
CO 3	Discriminate and interpret the Cases & meanings (विभाक्त्यर्थ) used in various verses of Ayurveda texts (आयुर्वेद संहिता). कारकविभक्त्यर्थादिषु परिज्ञानं तथा आयुर्वेदसंहितासु तेषां प्रयोगपरिचयञ्च	PO-5, PO-7, PO-9
CO 4	Formulate the Prose order (अन्वयः) of Slokas/Sutras in Ayurveda Textbooks (संहिता) to derive the meaning (वाच्यार्थ), to determine the Scientific Meaning (शास्त्रार्थ) and to Translate (Regional or other language). अन्वयलेखने वाच्यार्थावबोधने शास्त्रार्थावबोधने च सामर्थ्यं अनुवादनपाटवञ्च	PO-5, PO-6, PO-7, PO-8, PO-9
CO 5	Interpret the Synonyms (पर्यायाः) and Derivations (निरुक्ति) of Ayurveda Terms using samskrita dictionaries (संस्कृत शब्दकोश). कोशग्रन्थानां सहाय्येन आयुर्वेदे विद्यमानानां पदानां तेषां पर्यायानाञ्च निरुक्तिपूर्वक परिज्ञानं तेषां प्रयोगे परिचयञ्च	PO-5, PO-7, PO-9
CO 6	Speak, Write and Summarize and Express in Samskrit (संस्कृतम्). संस्कृतभाषायां भाषणे लेखने सङ्क्षिप्य लिखने अर्थप्रकाशने च सामर्थ्यम्	PO-5, PO-6, PO-7, PO-8, PO-9
CO 7	Develop the ethical responsibility towards the profession, society and human being. सामाजिक- औद्योगिक-मानुषिक धर्मबोधता	PO-6 & PO-8
Ayurved Itihas		
CO 8	Analyse and explain the important milestones in the history of Ayurveda	PO-1
CO 9	Appreciate the status of Ayurveda in different time periods and Contributions made by different Acharyas to Ayurveda.	PO-1

Table 2 : Contents of Course AyUG SN & AI

Sr No	A2 List of Topics AyUG-SN & AI Paper I	B2 Term	C2 Marks	D2 Lecture hours	E2 Non-Lecture hours
Paper I Sanskrit					
1	संस्कृतवर्णानाम् परिचयः – माहेश्वरसूत्राणि, उच्चारणस्थानानि, बाह्यप्रयत्नानि, अभ्यन्तर प्रयत्नानि	I	05	3	10
2	संज्ञा- 2.1 - संयोगः, संहिता, ह्रस्वदीर्घप्लुतः, अनुनासिकः, पदम्, धातुः, उपसर्गः, गुणः, वृद्धिः [विस्तरेण पाठनम् - Detailed teaching] 2.2 - इत्, लोपः, प्रत्याहारः, उदात्तः, अनुदात्तः, स्वरितः, सवर्णः, निपातः, प्रगृह्यम्, [सङ्क्षिप्य पाठनम् – Brief teaching]	2.1 – I 2.2 – II	05	05	-
3.	उपसर्गाः- उपसर्गाः क्रियायोगे प्र, परा, अप, सम्, अनु, अव, निस्, निर, दुस्, दुर्, वि, आङ्, नि, अपि, अधि, अति, सु, उत्, अभि, प्रति, परि, उप	II	05	02	03
4.	अव्ययानि 4.1 - च अपि खलु हि तु किल ननु वा च एव 4.2- पुनः विना उच्चैः ऋते एवम् सह सार्धम् युगपत् यथा –तथा यावत्-तावत् इति यदा-तदा यदि-तर्हि साकम् न कुत्र कति कुतः किमर्थम्, कियत् इह अत्र तत्र सर्वत्र अन्यत्र कुत्र एकत्र सदा अन्यथा एकथा [विस्तरेण पाठनम् - detailed teaching] A) Identify अव्ययानि B) Explain the meaning with reference to the context C) Construct the sentences using अव्ययानि	I A II B III C	5	I -01 II-01	I-0 II-0 III-03
5.	कारकप्रकरणम् – कर्तृकारकम्, कर्मकारकम्, करणकारकम्, सम्प्रदानकारकम्, अपादान कारकम्, अधिकरणकारकम्, सम्बन्धः, उपपदविभक्तिः सूत्रसहितपाठनं परं परीक्षायां सूत्रव्याख्यानादि प्रश्नानि न प्रष्टव्यानि A) Discriminate the विभक्ति and their meaning. B) Identify the karakas from Ayurveda texts like करणम् कारणम् C) Construct sentences D) Translate sentences from English to Sanskrit & from Sanskrit to English.	I A II B III C, D	15	I- 05	II-05 III-05
6.	सन्धिः 6.1 - अच् सन्धिः/स्वरसन्धिः - यण् सन्धि -इको यणचि, गुण सन्धिः=आहुणः वृद्धिसन्धिः-वृद्धिरेचि, अयवायाव सन्धिः - एचोऽयवायावः/वान्तो यि	II	15	10	10

	<p>प्रत्यये, लोप सन्धिः-लोपः शाकल्यस्य, पररूपसन्धिः-एडि पररूपम्, पूर्वरूपसन्धि- एडः पदान्तादति, प्रकृतीभाव- सर्वत्र विभाषा गोः, प्लुत प्रगृह्य अचि नित्यम् </p> <p>सूत्रसहितपाठनं परं परीक्षायां सूत्रव्याख्यानादि प्रश्नानि न प्रष्टव्यानि </p> <p>6.2 - हल्सन्धिः /व्यञ्जनसन्धिः - श्रुत्वसन्धिः- स्तोः श्रुना श्रुः, ष्रुत्वसन्धिः- ष्रुना ष्रुः, जश्त्व सन्धिः-झलां जशो/न्ते, अनुनासिकसन्धिः- यरोऽनुनासिकेऽनुनासिको वा/प्रत्यये भाषायां नित्यम्, परसवर्णसन्धिः-तोर्लिः/वा पदान्तस्य, चर्त्वसन्धिः</p> <p>खरि च, पूर्वसवर्णसन्धिः-झयोऽहोऽन्यतरस्याम्, छुत्वसन्धिः</p> <p>शश्छोऽटि/ छत्वममीति वाच्यम्, अनुस्वारसन्धिः- मोऽनुस्वारः, तुगागमसन्धिः- शि तुक्/छे च/पदान्ताद्वा, रुत्वआदेशसन्धिः-नश्छव्यप्रशान्</p> <p>सूत्रसहितपाठनं परं परीक्षायां सूत्रव्याख्यानादि प्रश्नानि न प्रष्टव्यानि </p> <p>6.3 - विसर्गसन्धिः - रुत्वसन्धिः-ससजुषो रुः, उत्त्वसन्धिः-अतो</p> <p>रोरप्लुदादप्लुते/हशि च, रो रि, भो भागो अघो अपूर्वस्य योऽशि , रोऽसुपि , एतत्तदोः सुलोपोऽकोरनञ् समासे हलि, सोऽचि लोपे चेत् पादपूरणम् </p> <p>सूत्रसहितपाठनं परं परीक्षायां सूत्रव्याख्यानादि प्रश्नानि न प्रष्टव्यानि </p> <p>6.4.- रुत्वप्रकरणसन्धिः- [सङ्क्षिप्य पाठनम् – Brief teaching]</p> <p>समः सुटि, कानाम्प्रेडिते च, अत्रानुनासिको पूर्वस्य तु वा, अनुनासिकात्परोऽनुस्वारः, खरवसानयोर्विसर्जनीयः, विसर्जनीयस्य सः, सम्पुङ्कानां सो वक्तव्यः </p>				
7.	<p>समास</p> <p>7.1 - अव्ययीभावसमासः - 7.1.1 - अव्ययम्</p> <p>विभक्तिसमीपसमृद्धिव्यर्थार्थाभावात्ययसम्प्रतिशब्दप्रादुर्भावपश्चाद्यथानुपूर्व्ययौगपद्यसादृश्यसम्पत्तिसाकल्यान्तवचनेषु 7.1.2. - प्रथमा निर्दिष्टम् उपसर्जनम्/ उपसर्जनं पूर्वम् /नाव्ययीभावादतो/ म् त्वपञ्चम्याः/ तृतीयासप्तम्योर् बहुलम्/अव्ययीभावे चाकाले </p> <p>7.2. - तत्पुरुष समासः - द्वितीया श्रितातीतपतितगतात्यस्तप्राप्तापन्नैः, तृतीया तत्कृतार्थेण गुणवचनेन, कर्तृकरणे कृता बहुलम्, चतुर्थी तदर्थार्थ बलिहितसुखरक्षितैः, पञ्चमीभयेन, षष्ठी, सप्तमीशौण्डैः, विशेषणं विशेष्येणबहुलम्, उपमानानि सामान्यवचनैः, नञ्, कर्मधारय, द्विगुः, उपपद तत्पुरुष</p> <p>7.3 - बहुव्रीहि समासः - अनेकमन्यपदार्थे</p> <p>7.4 - द्वन्त्वसमासः - चार्थे द्वन्द्वः</p> <p>सूत्रसहितपाठनं परं परीक्षायां सूत्रव्याख्यानादि प्रश्नानि न प्रष्टव्यानि </p>	II	15	09	10
8.	<p>शब्दरूपणि</p> <p>8.1 - पुल्लिङ्गःशब्दरूपाणि</p> <p>अकारान्तः - वात, वैद्य, रुग्ण, राम आदि</p> <p>इकारान्तः - अग्नि, मुनि आदि</p> <p>उकारान्तः - ऋतु, भानु गुरु आदि</p> <p>ऋकारान्तः - नृ, धातृ, पितृ आदि</p>	I	10	02	14

	<p>ओकारान्तः - गो आदि नकारान्त - श्लेश्मन्, रोगिन्, ज्ञानिन् आदि सकारान्त - चन्द्रमस् आदि तकारान्त - मरुत् आदि दकारान्त - सुहृद् आदि जकारान्त - भिषज्, आदि शकारान्तः - कीदृश्, एतादृश् आदि</p> <p>8.2 - स्त्रीलिङ्गःशब्दरूपाणि आकारान्तः - बला, कला, स्थिरा, माला आदि इकारान्तः - सम्प्राप्ति, प्रकृति, मति आदि ईकारान्तः - धमनी, नदी आदि उकारान्तः - रज्जु, धेनु आदि ऊकारान्तः - वर्षाभू, वधू आदि ऋकारान्तः - मातृ आदि चकारान्तः - वाच् आदि तकारान्तः - योषित्, सरित् आदि दकारान्तः - परिषद् आदि जकारान्तः - स्रज् आदि सकारान्तः - जलौकस्, सुमनस् आदि षकारान्तः - प्रावृष् आदि</p> <p>8.3 - नपुंसकलिङ्ग शब्दरूपाणि अकारान्तः - पित्त, वन आदि उकारान्तः - अश्रु, मधु आदि इकारान्तः - अक्षि, अस्थि, वारि, दधि आदि ऋकारान्तः - ज्ञातृ, धातृ आदि नकारान्तः - वर्त्मन्, दण्डिन् आदि सकारान्तः - स्रोतस्, मनस् आदि षकारान्तः - सर्पिष्, आयुष् आदि तकारान्तः - शकृत्, जगत् आदि</p> <p>अष्टाङ्गहृदयसंहितायाम् विद्यमानानाम् अन्यानामपि समाननामरूपाणाम् परिचयकरणम् अभिलषणीयम् प्रश्नपत्रे न प्रष्टव्यम् </p> <p>8.4 - सर्वनामपदानि - अस्मद्, युष्मद्, तद्, एतद्, यद्, किम्, इदम् आदि</p>				
<p>9.</p>	<p>धातुरूपाणि - [विस्तरेण पाठनम्-detailed teaching]</p> <p>9.1 - परस्मैपदि - लट्/लृट्/लङ्/विधिलिङ्/लोट् भ्वादि गण - भू सत्तायाम्, क्षि क्षये, गमू(गम्) गतौ, पा पाने, जीव्, पच्, त्यज्, दृश् (पश्य) अदादि गण - अद् भक्षणे, हन् हिम्सागत्योः, वा गतिगन्धनयोः पा रक्षणे, अस्, श्वस्, स्वप्, ब्रू जुहोत्यादि गण- धा धारणपोषणयोः, पृ - पलनपूरणयोः, हा त्यागे, दा (दाञ्) दिवादि गण- दिवु क्रीडादौ, त्रसी उद्वेगे, पुष् पुष्टौ, कुप्, नश्, तुष्, स्निह्, जृ स्वादि गण- चिञ् चयने, शक्, श्रु तुदादि गण- तुद् व्यथने, कृष् विलेखने, लिख् लेखने, दिश्, कृन्त्, क्षिप्, स्पृश्</p>	<p>I</p>	<p>10</p>	<p>05</p>	<p>05</p>

	<p>रुधादि गण- रुधिर् आवरणे, भिदिर् विदारणे, भुज् तनादि गण- तनु विस्तारे, कृञ् करणे क्र्यादि गण- प्रीञ् -तर्पणे कान्ते च, ग्रह् उपादाने, ज्ञा चुरादि गण- गण् संस्थाने, साध्, ताड्, धृ, कथ् वाक्यप्रबन्धे आत्मनेपदि- भ्वादि गण - वृतु वर्त्तने, वृध्(वर्ध्), लभ्, सेव्, रुच् अदादि गण - शीङ् स्वप्ने, ब्रू जुहोत्यादि गण- धा धारणपोषणयोः, दा (दाञ्), दिवादि गण- जनी प्रादुर्भाव, मन्, बुध्, पद्, विद् स्वादि गण- चिञ् चयने, तुदादि गण- तुद् व्यथने, कृष् विलेखने, भ्रि, विद्, मुच्, सिञ्च्, रुधादि गण- रुधिर् आवरणे, भिदिर् विदारणे, भुज् तनादि गण- तनु विस्तारे, कृञ् करणे क्र्यादि गण- प्रीञ् -तर्पणे कान्ते च, ग्रह् उपादाने, ज्ञा चुरादि गण- चुर्, क्षाल्, कथ्, घोष्, भक्ष् आयुर्वेदसंहितासु विद्यमानानां धतुरूपाणां परिचयीकरणम् अभिकाम्यम् 9.2 - लृङ्ग , आशीर्लिङ्ग, लिट , लुङ्ग, लुड [सङ्क्षिप्य पाठनम्-Brief teaching] भ्वादि गण, अदादि गण, जुहोत्यादि गण, दिवादि गण, स्वादि गण, तुदादि गण, रुधादि गण, तनादि गण, क्र्यादि गण, चुरादि गण पूर्वोक्तधातुष्वेकस्य पञ्चलकारेषु रूपाणि दर्शयेत् परं परीक्षायाम् न पृष्टव्यानि </p>				
10	<p>प्रत्ययाः 10.1 – क्त - क्तवत्, तव्यत् – अनीयर्, शतृ – शानच्, ल्युट् - ण्वुल्, क्त्वा - ल्यप्, णिनिः, क्तिन्, तुमुन् प्रत्ययाणाम् प्रयोगाः एव पृष्टव्याः 10.2 - भावे घञ्, करणे घञ्, भावे ष्यञ्, कर्मणि ण्यत्, कर्त्तरि अच् अप् आयुर्वेदसंहितायां विद्यमानानां भावे/करणे/कर्त्तरि/ताच्छील्ये/ आदि प्रत्ययानां परिचयः करणीयः परं परीक्षायाम् न पृष्टव्याः परीक्षायाम् वाच्य प्रयोगः स्वरूपे पृष्टव्यः </p>	II	10	05	6
11	विशेषण विशेष्य	II	05	02	03

Paper II – Part A Sanskrit					
	A2 List of Topics (Maximum Marks – 80 (SAQ & LAQ only)	B2 Term	C2 Marks	D2 Lecture hours	E2 Non- Lecture hours
1	<p>निरुक्ति तथा पर्याय पदानि— A) आयुः, शरीर, मनः, अग्निः, जलम्, वातः, पित्तम्, कफः B) रस, रक्त, मांस, मेद, अस्थि, मज्जा, शुक्र, इन्द्रियम्, श्रोत्रः, चक्षुः, रसना, घ्राण C)) धी, धृति, स्मृति, बुद्धी, मति, प्रज्ञा, मूत्र, पुरीषः, स्वेद, आत्मा, रोगः, निदानम्,</p>	A- I B – II C- III	15	7 (A-1, B-3, C-3)	13 (A- 4, B-4, C-5)

	रोगिः, भेषजचिकित्सा , आदि				
2	<p>परिभाषापदानि –</p> <p>A) आयुर्वेदः, पञ्चमहाभूतानि, त्रिगुणम्, दोषाः, मलाः, दूष्यम्, सम्सर्गः, सन्निपातः</p> <p>B) द्रव्य ,गुण, कर्म ,सामान्य, विशेष, गुरु, लघु, प्रकृतिः, विकृतिः, चयः, प्रकोपः, प्रसरः, स्थानसम्प्रयः, दोषगतिः भेदः, रसः, वीर्यम्, विपाकः, कार्यकारणभावः</p> <p>C) स्रोतस्, कोष्ठः, आमम्, विरुद्धाहम्, विरुद्धाहारः, विदाहि, विष्टम्भि, सात्म्यम्, ओकसात्म्यम्, देशसात्म्यम्, अत्यशनम्, अध्यशनम्, स्थानी, योगवाही, पथ्यम्, अपथ्यम्, कृतान्नवर्गः, अवस्थापाकः, वेगः, शोधन, शमन, लंघन, बृहण, अनुपान आदि</p>	<p>A - I</p> <p>B - II</p> <p>C- III</p>	20	<p>10</p> <p>(A-2, B-4, C-4)</p>	<p>15</p> <p>(A- 5, B-5, C-5)</p>
3.	<p>अन्वयलेखनम् -</p> <p>A) अष्टाङ्गहृदयम् सूत्रस्थानम् - अध्यायतः सर्वाणि सूत्राणि</p> <p>१. आयुष्कामीयम्</p> <p>२. दिनचर्या</p> <p>३. रोगानुत्पादनीयम्</p> <p>B) अष्टाङ्गहृदयम् सूत्रस्थानम् - अध्यायतः सर्वाणि सूत्राणि</p> <p>दोषादिविज्ञानीयम्</p> <p>दोषभेदीयम्</p> <p>दोषोपक्रमणीयम्</p> <p>द्विविधोपक्रमणीयम्</p> <p>C) वैद्यकीय सुभाषितसाहित्यम् - shloka numbers – (भास्कर गोविन्द घाणेकर लिखित, चौखम्बा प्रकाशन)</p> <p>प्रथमः 1, 2</p> <p>द्वितीयः 1, 7</p> <p>तृतीयः 9</p> <p>चतुर्थः 2, 3</p> <p>पञ्चमः 2, 3</p> <p>षष्ठः 1, 4, 7</p> <p>सप्तमः 2, 5, 17</p> <p>अष्टमः 13, 12</p> <p>नवमः 12, 13</p> <p>दशमः 1, 19</p> <p>एकादशः 1, 2</p> <p>द्वादशः 1, 6</p> <p>त्रयोदशः 1, 7, 8, 9</p>	<p>A - I</p> <p>B - II</p> <p>C - III</p>	30	<p>20</p> <p>(A- 4, B- 8, C- 8)</p>	<p>14</p> <p>(A- 4, B- 5, C- 5)</p>

	<p>चतुर्दशः 2, 3, 4</p> <p>पञ्चदशः 7, 10</p> <p>षोडशः 5, 6</p> <p>सप्तदशः 1, 4</p> <p>अष्टादशः 1, 2, 3</p> <p>एकोनविंशतिः 2, 3, 4</p> <p>विंशतिः , 12, 3, 4</p> <p>श्लोकपूरणं न प्रष्टव्यम् परीक्षायाम् पदच्छेदं विग्रहवाक्यम् अन्वयः वाक्यार्थं भावार्थं इत्यादयः एव प्रष्टव्याः </p>				
4.	<p>पञ्चतन्त्र-अपरीक्षितकारकम् ५ अध्याय</p> <p>कथा -१ नापितक्षपणक कथा</p> <p>कथा-२ नकुलीब्राह्मणी कथा</p> <p>कथा-३ चक्रधर कथा</p> <p>कथा-४ सिंहकारक मूर्खपण्डितकथा</p> <p>कथा-५ मूर्खपण्डित कथा</p> <p>श्लोकपूरणं तथा अन्वयलेखनं न प्रष्टव्ये </p>	III	15	03	04

Paper II – Part B – Ayurved Itihas –					
	A2 List of Topics AyUG SN & AI (Maximum Marks – 20 (MCQ only))	B2 Term	C2 Marks	D2 Lecture hours	E2 Non- Lecture hours
1	Derivation (Vyutpatti and Nirukti) and definition of Itihasa. Necessity, Significance and Utility of knowledge of Ayurveda itihasa. Means and method of study of Ayurveda itihasa. Different Time periods relevant for the Study of Ayurveda itihasa (viz, Prevedic, Vedic, Samhita kala, Sangraha kala etc.)	I	5	1	2
2	Origin and lineage of Ayurveda (Ayurvedavatarana) and Introduction of references of Ayurveda in Veda, Upanishat and Puarana.	I		1	2
3	Structure, Specialities, Time period of Ayurveda Samhitas and their commentaries (including Special contributions of authors and commentators): Charaka Samhita, Sushruta Samhita, Ashtanga Sangraha, Ashtanga Hridaya, Bhela Samhita, Hareeta Samhita, Kashyapa Samhita.	I	5	2	2

4	Structure, Contributions and importance of Laghutrayee and Commentaries: Madhava Nidana, Sharngadhara Samhita, Bhavaprakasha.	II		1	3
5	Origin and period of different systems of medicine in the world.	II	5	1	2
6	Introduction to Vrukshayurveda, Hastyayurveda and Ashwayurveda. (Included in Transitional Curriculum)	II		-	1
7	Status of Ayurveda during the period of Ashoka, Mughal and British rule.	II		1	2
8	Contribution of Scholars of modern era: Acharya Gana Nath Sen, Vaidya Yamini Bhushan Rai, Vaidya Shankar Dajishastri Pade, Acharya Swami Lakshmiram, Acharya Yadavji Tikramji, Dr. PM. Mehta, Vaidya B G Ghanekar, Vaidya Damodar Sharma Gaur, Acharya Priyavrat Sharma, Vaidya C Dwarakanath, Vaidya K R Shrikantamurthy, Vaidya VJ Thakkar, Vaidyaratnam PS Varier, Vaidya B V Gokhale.	III	5	1	2
9	Globalization of Ayurveda	III		1	2
10	1)Developmental activities in Ayurveda in the post-independence period: <ul style="list-style-type: none"> • Introduction to various committees and their recommendations • Introduction of activities of the following Organizations : Department of AYUSH, CCIM/ NCISM, CCRAS, 2) National institutions Viz- All India Institute of Ayurved (AIIA), National Institute of Ayurveda, Jaipur. ITRA, Jamnagar. Faculty of Ayurveda, BHU, Varanasi. Rashtriya Ayurveda Vidyapeetha, New Delhi.	III		1	2

Table 3: Learning objectives (Theory) of Course AyUG-SN & AI

Paper I – Sanskrit									
A3 Course outcome	B3 Learning Objective (At the end of the session, the Students should be able to)	C3 Domain/sub	D3 Must to know/ desirable to know/Nice to know	E3 Level Does/ Shows how/ Knows how/ Know	F3 T-L method	G3 Assessment	H3 Formative /summative	I3 Term	J3 Integration
Topic 1- संस्कृतवर्णानाम् परिचयः(5 marks) Time: 13 hrs (Lecture:- 3 hours Non lecture10 hrs)									
CO 1, CO 6	Read & write Sanskrit words	Cognitive domain - Knowledge	Must know	Khows how	Practical classes Demonstrations Classroom reading	Oral Written	F&S	I	
CO 1, CO 6	Pronounce Sanskrit as per their appropriate articulations	Cognitive domain – Comprehension	Must know	Khows how/ Shows how	1) Practical classes 2) presentation of videos 3) Graphical Representation of Vocal system Class room reading / speaking	Oral / Written Assignment on Identifying the Places of articulation of the words in Ayurveda texts.	F&S	I	
Topic 2- संज्ञा (10 marks)- Time: 05 Hrs (Lecture:- 5 hours Non lecture 00 hrs)									
CO 2, CO 4, CO	2.1 Explain the terms related to संज्ञा in Sanskrit grammar	Cognitive domain- Comprehension	Desirable to know	Knows	Lecture with Power point presentation	Oral, Conduction of quiz	F&S	II	
CO 2, CO 4, CO 5	2.2 Identify the संज्ञा Explain the meaning of the संज्ञा	Cognitive domain- Comprehension	Must know	Khows how	Lecture with Power point presentation	Oral / written Very short answer Differentiate, identify, fill in the blanks etc	F&S	I	

						Preparation of MSQ (MCQ) Question-answer sessions			
Topic 3 उपसर्गाः - उपसर्गाः क्रियायोगे (05 marks) Time: 05 Hrs (Lecture:- 02 hours Non lecture 03 hrs)									
CO 2, CO 4, CO 6	Identify the उपसर्गाः: Explain the meaning of the words with उपसर्गाः: Identify the difference in meaning according to the उपसर्गाः:	Cognitive domain - Comprehension problem solving	Must know	Knows how	Lectures with Power point presentation. Problem Based Learning (PBL) Group Discussions	Oral & Written objective type very short answer compare differentiate etc, Assignments open book test	F&S	II	
Topic 4- अव्ययानि (05 marks) Time: 05 Hrs (Lecture:- 02 hours Non lecture 03 hrs)									
CO 2, CO 4, CO 6	4.1 Identify अव्ययानि	Cognitive domain - Comprehension	Must know	Knows	Lectures with Power point presentation. Group Discussions	Oral & Written. objective type very short answer - compare, differentiate Assignments on sentence construction, presentation by the students	F&S	I	
CO 2, CO 4, CO 6	4.2 Explain the meaning with reference to the context	Cognitive domain – Application	Must Know	Knows how	Lectures with Power point presentation. Group Discussions	Oral & Written objective type very short	F&S	II	

						answer / compare differentiate Assignments open book test			
CO 2, CO 4, CO 6	Construct the sentences using अव्ययानि	Cognitive domain - Synthesis	Must Know	Shows how	Lectures with Power point presentation. Group Discussions Conversation Sessions	Oral & Written Construct sentences with proper use of Avyayas. Use appropriate Avyayas. Very short answer Assignments on finding out the अव्ययानि used in the texts and explain their meaning with reference to the context. Open book test.	F&S	III	

Topic 5— कारकप्रकरणम् (15 marks) Time: 15 Hrs (Lecture:- 5 hours Non lecture 10 hrs)

CO 3, CO 6	A) Discriminate the विभक्ति and their meaning. B) Identify the karakas from Ayurveda texts like करणम् कारणम् C) Construct sentences. D) Translate sentences from English to	Cognitive domain - Synthesis problem solving	Must know	Shows how	Lectures with Power point presentation. Group Discussions	Oral & Written objective type very short answer / compare differentiate /	F&S	A)– I B) – II C) – III D) - III	
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	Sanskrit & from Sanskrit to English.					meaning with reference to the context etc Assignments on identification of the karakas used in the Ayurveda basic principle terms like करणम् कारणम्.			
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Topic 6- सन्धिः (15 marks) Time: 20 Hrs (Lecture:- 10 hours Non lecture 10 hrs)

CO 2, CO 6	6.1 Identify सन्धिः Explain the meaning of the context by splitting. Formulate the joined words while writing the sentences	Cognitive domain - Application and problem solving	Must know	Knows how	Lectures with Power point presentation. Group Discussions Classes by the students Ashtang hrudaya with the सन्धिः	Oral & Written Objective type, very short answer – compare, differentiate etc. Assignments to find the सन्धिः in Ashtangahrudaya Quiz on सन्धिः	F&S	II	
CO 2, CO 6	6.2 Identify सन्धिः Explain the meaning of	Cognitive domain - Application and problem solving	Must know	Knows how	Lectures with Power point presentation. Group Discussions	Oral & Written objective type very short	F&S	II	

	the context by splitting. Formulate the joined words while writing the sentences				Classes by the students Ashtang hrudaya with the सन्धि:	answer compare and differentiate Assignments to find the सन्धि: in Ashtangahrudaya Quiz on सन्धि: Preparation of charts, mindmaps etc.			
CO 2, CO 6	6.3 Identify सन्धि: Explain the meaning of the context by splitting. Formulate the joined words while writing the sentences	Cognitive domain - Application and problem solving	Must know	Knows how	Lectures with Power point presentation. Group Discussions Classes by the students Ashtang hrudaya with the सन्धि:	Oral & Written objective type very short answer Assignments to find the सन्धि: in Ashtang hrudaya Quiz on सन्धि: Preparation of charts, mindmaps etc.	F&S	II	
CO 2, CO 6	6.4 Identify सन्धि: Explain the meaning of the context by splitting.	Cognitive domain – Comprehension Application	Desirable to know	Knows	Lectures with Power point presentation.	Oral Preparation of charts, mindmaps etc.	F&S	II	

Topic 7- समास (15 marks) Time: 19 Hrs. (Lecture:- 09 hours Non lecture 10 hrs)									
CO 2	Identify समास: Discriminate between the सन्धि:and समास:	Cognitive domain - Comprehension	Must know	Knows	Lectures with Power point presentation. Group Discussions Problem Based Learning(PBL) Flipped classroom Peer learning Classes by the students on the sutras in Ashtang hrudaya with the विग्रहवाक्यम्	Oral & Written objective type very short answer- compare differentiate Assignments to find the समास: in Ashtanga hrudaya Quiz on समास: Puzzles Word cloud Cross words etc.	F&S	II	
CO 2, CO 6	7.1 Identify समास: Explain the meaning of the context by writing the विग्रहवाक्यम् Construct the समस्तपदम्while writing the sentences	Cognitive domain - Application and problem solving	Must know	Shows how	Lectures with Power point presentation. Group Discussions Problem Based Learning(PBL) Flipped classroom Peer learning Classes by the students on the sutras in Ashtang hrudaya with the विग्रहवाक्यम्	Oral & Written objective type very short answer Assignments to find the समास: in Ashtangahrdaya a Quiz on समास: Puzzles Word cloud Cross words	F&S	II	

						etc. Preparation of charts, mindmaps etc.			
CO 2, CO 6	7.2 Identify समासः Explaining the meaning of the context by writing the विग्रहवाक्यम् Construct the समस्तपदम् while writing the sentences	Cognitive domain - Application and problem solving	Must know	Shows how	Lectures with Power point presentation. Group Discussions Problem Based Learning(PBL) Flipped classroom Peer learning Classes by the students on the sutras in Ashtang hrudaya with the विग्रहवाक्यम्	Oral & Written objective type very short answer Assignments to find the समासः in Ashtangahrdaya Quiz on समासः Puzzles Word cloud Cross words etc. Preparation of charts, mindmaps etc.	F&S	II	
CO 2, CO 6	7.3 Identify समासः Explaining the meaning of the context by writing the विग्रहवाक्यम् Construct the समस्तपदम् while writing the sentences	Cognitive domain - Application and problem solving	Must know	Shows how	Lectures with Power point presentation. Group Discussions Problem Based Learning(PBL) Flipped classroom Peer learning Classes by the students on the sutras in Ashtang hrudaya with the विग्रहवाक्यम्	Oral & Written objective type very short answer meaning with reference to the context etc. Assignments to find the समासः in Ashtangahrdaya	F&S	II	

						a Quiz on समासः Puzzles Word cloud Cross words etc. Preparation of charts, mindmaps etc.			
CO 2, CO 6	7.4 Identify समासः Explaining the meaning of the context by writing the विग्रहवाक्यम् Construct the समस्तपदम् while writing the sentences	Cognitive domain - Application and problem solving	Must know	Shows how	Lectures with Power point presentation. Group Discussions Flipped classroom Peer learning Classes by the students on the sutras in Ashtang hrudaya with the विग्रहवाक्यम् Problem Based Learning(PBL)	Oral & Written objective type very short answer Assignments to find the समासः in Ashtangahrdaya a Quiz on समासः Puzzles Word cloud Cross words etc. Preparation of charts, mindmaps etc.	F&S	II	
Topic 8- शब्दरूपाणि (10 marks) Time: 16 Hrs (Lecture:- 2 hours Non lecture 14 hrs)									
CO 2, CO 3, CO 6	Identify & write the अन्तलिङ्गविभक्तिवचनानि of a noun. Construct sentences	Cognitive domain – Synthesis problem solving	Must know	Shows how	Lectures with Power point presentation. Recitation Peer learning	Oral & Written objective type very short answer	F&S	I	

					Group Discussions	Assignments to find out the अन्तलिङ्गविभक्तिवचनानि of nouns used in various text books and writing all forms of all विभक्ति. Quizzes Puzzles Word cloud Cross words etc.			
Topic 9- धातुरूपाणि (10 marks) Time: 10Hrs. (Lecture:- 5 hours Non lecture 05 hrs)									
CO 2, CO 6	9.1 Identify & write लकारपदपुरुषवचनानि of the roots. Interpret the meaning according to the लकार: Use for constructing sentences.	Cognitive domain - Synthesis and problem solving	Must know	Shows how	Lectures with Power point presentation. Recitation Group Discussions Peer learning	Oral & Written objective type very short answer Assignments to find out the verbs used in various text book in the syllabus and completing all the forms. Quizzes Word cloud etc.	F&S	I	
CO 2, CO 6	9.2 Identify & write लकारपदपुरुषवचनानि of the roots.	Cognitive domain- Comprehension problem	Nice to know	Knows	Lectures with Power point presentation. Group Discussions	Oral Assignments Quizzes Word cloud etc.	F&S	I	

	Interpret the meaning according to the लकारः	solving							
Topic -10 प्रत्ययाः (10 Marks) Time: 11 Hrs (Lecture:- 5 hours Non lecture 06 hrs)									
CO 2, CO 6	10.1 Identify the प्रत्ययाः Interpret the meaning with reference to the context with the support of the प्रत्ययाः	Cognitive domain - Comprehension and problem solving	Must know	Shows how	Lectures with Power point presentation. Group Discussions	Oral & Written objective type very short answer Assignments Quizzes	F&S	II	
CO 2, CO 6	10.2 Identify the प्रत्ययाः Interpret the meaning with reference to the context with the support of the प्रत्ययाः (परीक्षायाम् वाच्य प्रयोगः स्वरूपे पृष्टव्यः)	Cognitive domain- Application and problem solving	Must to Know	Shows how	Lectures with Power point presentation. Group Discussions	Oral Assignments Quizzes	F&S	II	
Topic 11- विशेषण विशेष्य (05 Marks) Time: 05 Hrs (Lecture:-02 hours Non lecture 03 hrs)									
CO 2, CO 6	Identify and discriminate different types of Visheshanas. Effectively use visheshanas in sentences.	Cognitive domain - Application and problem solving	Must know	Knows how / Shows how	Lectures with Power point presentation. Flipped classroom	Oral & Written Quizzes Word cloud etc.	F&S	II	

Paper II Part A - Sanskrit Learning Objective									
A3 Course outcome	B3 Learning Objective (At the end of the session, the Students should be able to)	C3 Domain/sub	D3 Must to know/ desira ble to know/ Nice to know	E3 Level Does/ Shows how/ Knows how/ Know	F3 T-L method	G3 Assessment	H3 Form ative /sum mative	I3 Te rm	J3 Integr ation
Topic 1- निरुक्ति/ Paryaya padani (15 marks) Time: 18 Hrs. Lecture:- 7 hours (A-2, B-5) Non lecture 13 (A- 4, B-4, C-5 hrs)									
CO 2, CO 5	Explain the meaning of the words and their synonyms with the help of their nirukti (निरुक्तिः) A) आयुः ,शरीर, मनः, अग्निः, जलम्, वातः, पित्तम्, कफः B) रस, रक्त, मांस, मेद, अस्थि, मज्जा, शुक्र , इन्द्रियम्, श्रोत्र, चक्षु , ,रसना, घ्राण C) धी, धृति, स्मृति ,बुद्धी , ,मति प्रज्ञा ,मूत्र ,पुरीषः, स्वेद, आत्मा, रोगः, निदानम् ,रोगि , भेषजचिकित्सा , आदि	Cognitive domain - comprehension	Must know	Knows how	Lectures with Power point presentation. Flipped classroom Peer learning Ayurveda Samhita Group Discussions	Oral & Written objective type very short answer compare differentiate meanings meaning with reference to the context etc Assignments Open book test	F & S	A- I B – II C- III	Sa mh ita, Kr iya Sh ari r, Ra ch an a Sh ari r.
Topic 2- परिभाषापदानि (20 marks) Time 25 Hrs (Lecture:- 10 (A-2, B-4, C- 4 hours) Non lecture 15 (A- 5, B-5, C-5 hrs)									

CO 2, CO 5	<p>Explain the meaning of the words and their synonyms with the help of their nirukti (निरुक्तिः)</p> <p>Describe the Paribhasapadas (परिभाषापदः) परिभाषापदानि –</p> <p>A) आयुर्वेदः, पञ्चमहाभूतानि, त्रिगुणम्, दोषाः, मलाः, दूष्यम्, सम्सर्गः, सन्निपातः</p> <p>B) द्रव्य, गुण, कर्म, सामान्य, विशेष, गुरु, लघु, प्रकृतिः, विकृतिः, चयः, प्रकोपः, प्रसरः, स्थानसम्श्रयः, दोषगतिः भेदः, रसः, वीर्यम्, विपाकः, कार्यकारणभावः</p> <p>C) स्रोतस्, कोष्ठः, आमम्, विरुद्धाह्वम्, विरुद्धाहारः, विदाहि, विष्टम्भि, सात्म्यम्, ओकसात्म्यम्, देशसात्म्यम्, अत्यशनम्, अध्यशनम्, स्थानी, योगवाही, पथ्यम्, अपथ्यम्, कृतान्नवर्गः, अवस्थापाकः, वेगः, शोधन, शमन, लंघन, बृहण, अनुपान आदि</p>	Cognitive domain – Comprehension Application	Must know	Knows how	<p>Lectures with Power point presentation.</p> <p>Flipped classroom</p> <p>Peer learning</p> <p>Group Discussions</p>	<p>Oral & Written objective type very short answer write short notes Assignments from Ayurveda Samhita Open book test</p>	F&S	A- I B – II C- III	Sa mh ita, Kr iya Sh ari r, Ra ch an a Sh ari r.
Topic 3 - अन्वयलेखनम् (30 marks) Time 34 Hrs (Lecture:- 20 (A- 4, B- 8, C-8 hours) Non lecture 14 (A-4, B-5, C-5 hrs)									
CO 4, CO 6	Identify the subject object Adjective noun verb in a sentence.	Cognitive domain – Comprehension Application	Must know	Shows how	<p>Self-directed learning</p> <p>Flipped classroom</p> <p>Classes by the students</p>	<p>Oral & Written Objective type Very short answer Anvaya writing</p>	F&S	A - I B - II C- III	Sa mh ita

<p>Write the पदच्छेदं विग्रहवाक्यम् अन्वयः वाच्यार्थं and भावार्थम् Of shlokas</p> <p>A) अष्टाङ्गहृदयम् सूत्रस्थानम् – अध्यायतः सर्वाणि सूत्राणि १. आयुष्कामीयम् २. दिनचर्या ३. रोगानुत्पादनीयम्</p> <p>B) अष्टाङ्गहृदयम् सूत्रस्थानम् – अध्यायतः सर्वाणि सूत्राणि दोषादिविज्ञानीयम् दोषभेदीयम् दोषोपक्रमणीयम् द्विविधोपक्रमणीयम्</p> <p>C) वैद्यकीय सुभाषितसाहित्यम् – shloka numbers - प्रथमः 1, 2 द्वितीयः 1, 7 तृतीयः 9 चतुर्थः 2, 3 पञ्चमः 2, 3 षष्ठः 1, 4, 7 सप्तमः 2, 5, 17 अष्टमः 13, 12 नवमः 12, 13 दशमः 1, 19 एकादशः 1, 2 द्वादशः 1, 6</p>			<p>Group Discussions</p>	<p>Short answer Assignments on writing पदच्छेदं विग्रहवाक्यम् अन्वयः वाच्यार्थं भावार्थम्</p>		
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त्रयोदश: 1, 7, 8, 9 चतुर्दश: 2, 3, 4 पञ्चदश: 7, 10 षोडश: 5, 6 सप्तदश: 1, 4 अष्टादश: 1, 2, 3 एकोनविंशति: 2, 3, 4 विंशति: , 12, 3, 4									
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Topic 4 - पञ्चतन्त्र-अपरीक्षितकारकम् ५ अध्याय (15 marks) Time 07 Hrs (Lecture:- 03 hours Non lecture 04 hrs)

CO 4, CO 6	Construct Sanskrit sentences and comprehend a passage. Convert active and passive voice sentences. १. क्षपणक कथा २. नकुलब्राह्मणी कथा ३. चक्रधर कथा ४. सिंहकारकब्राह्मणपुत्र कथा ५. मूर्खपण्डित कथा	Cognitive Domain-Synthesis Problem Solving	Must know	Shows how	Activity based learning Self-directed learning Flipped classroom Group Discussions	Oral & Written objective type very short answer write summery Assignments on finding out प्रत्ययः and क्रियापदानि Assignments of changing the voice. Assignments on translation	F&S	III	
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PAPER II Part B Ayurved Itihas

A3 Course outcome	B3 Learning Objective	C3 Domain/sub	D3 Must to know/ desirable to know/Nice to know	E3 Level Does/ Shows how/ Knows how/ Know	F3 T-L method	G3 Assessment	H3 Formative /summative	I3 Term	J3 Integration
	(At the end of the session, the students should be able to)								

Topic 1- Time (Lecture:- 1 hour, Non lecture 2 hours)									
CO 8	Describe Etymological derivation (Vyutpatti), syntactical derivation (Niruktti) and definition of the word Itihasa.	Cognitive/ Knowledge (K)	Must know	Knows	Lecture & Group Discussion,	Written MCQ	F & S	I	
CO 8	Describe of knowledge of history, its significance and utility, means and method of Ayurveda history	Cognitive/ comprehension	Must know	Knows	Lecture & Group Discussion, Tutorial, Video clips	Written MCQ Discussions or debate	F	I	
CO 8 CO 9	Explain Different Time periods relevant for the Study of Ayurveda itihasa (viz, Prevedic, Vedic, Samhita kala, Sangraha kala etc.)	Cognitive/K	Must know	Knows	Lecture & Group Discussion, Tutorial, Charts, Edutainment.	Written MCQ	F & S	I	
Topic 2- Time (Lecture:- 1 hour, Non lecture 2 hours)									
CO 8 CO 9	Explain different opinions of origin and lineage of Ayurveda available in Samhitas and Samudra manthana and origin of Dhanvantari.	Cognitive/K	Must know	Knows	Lecture, video & Group Discussion	Written MCQ	F & S	I	
CO 8 CO 9	Outline 2-3 references of Ayurveda in Veda, Upanishat and Puarana	Cognitive/K	Desirable to know	Knows	Lecture, charts & Group Discussion, SDL	Written MCQ, Online search of Archiological sites for Ayurved. Presentation by Students,	F	I	

CO 8	Describe Ayurveda as Upaveda of Atharvaveda	Cognitive/comprehension	Desirable to know	Knows	Lecture & Group Discussion	Written MCQ	F & S	I	
Topic 3- Time (Lecture:- 2 hour, Non lecture 2 hours)									
CO 8 CO 9	Describe the Structure, Specialities, Time period of Charaka Samhita	Cognitive/K	Must know	Knows	Lecture, charts & Group Discussion Online Visit of Charakaranya, related places.	Written MCQ Chart preparation	F & S	I	
CO 8 CO 9	Briefly explain contribution of Punarvasu Athreya, Agnivesha, Charaka, Drudhabala	Cognitive/K	Must know	Knows	Lecture & Group Discussion	Written MCQ	F & S	I	
CO 8 CO 9	Enumerate the important Commentaries on Charaka Samhita and identify their authors.	Cognitive/K	Must know	Knows	Lecture & Group Discussion, Activity on commentary, Compilation.	Written MCQ Online samhitas, Commentary search	F & S	I	
CO 8 CO 9	Explain the importance of Ayurveda Deepika, Jalpakalpataru.	Cognitive/K	Must know	Knows	Lecture & Group Discussion.	Written MCQ	F & S	I	
CO 8 CO 9	Justify Charakastu Chikitsite in view of Global medical history.	Cognitive/K	Must know	Knows	Lecture & Group Discussion,	Written MCQ Debate Creative writing	F	I	Roganidana, Kayachikitsa
CO 8 CO 9	Describe the Structure, Specialities, Time period of Sushruta Samhita	Cognitive/K	Must know	Knows	Lecture & Group Discussion	Written MCQ Poster making	F & S	I	
CO 8 CO 9	Briefly explain contribution of Dhanvantari, Sushruta,	Cognitive/k	Must know	Knows	Lecture & Group Discussion	Written MCQ	F & S	I	Salya tantra

	Nagarjuna, Chandrata								
CO 8 CO 9	Enumerate the important commentaries on Sushruta Samhita and identify their authors.	Cognitive/K	Must know	Knows	Lecture & Group Discussion	Written MCQ Chart or collage	F & S	I	
CO 8 CO 9	Explain the importance of Nibandha sangraha, Nyaya chandrika,	Cognitive/K	Must know	Knows	Lecture & Group Discussion	Written MCQ	F & S	I	
CO 8 CO 9	Justify Shaareere Sushruta	Cognitive/comprehension	Must know	Knows	Lecture & Group Discussion	Written MCQ Debate/Discussions	F	I	Rachana Sharira, Kriya sharira
CO 8 CO 9	Describe the Contributions of Sushruta Samhita to the field of surgery.	Cognitive/Comprehension	Must know	Knows	Lecture & Group Discussion	Written MCQ	F & S	I	Shalya Tantra
CO 8 CO 9	Identify the acharyas of Atreya and Dhanvantari Sampradaya	Cognitive/K	Must know	Knows	Lecture & Group Discussion Quiz	Written MCQ	F & S	I	
CO 8 CO 9	Describe the Structure, Specialities, Time period of Ahtanga sangraha and Ashtang hridaya.	Cognitive/K	Must know	Knows	Lecture & Group Discussion Video Clips	Written MCQ Chart or collage of events	F & S	I	
CO 8 CO 9	Briefly explain contributions of Vriddha and Laghuvagbhata	Cognitive/K	Must know	Knows	Lecture & Group Discussion	Written MCQ	F & S	I	
CO 8 CO 9	Enumerate commentaries on Ahtanga sangraha and Ashtang hridaya and explain importance of Indu, Hemadri and Arunadatta commentary.	Cognitive/K	Must know	Knows	Lecture & Group Discussion	Written MCQ Quiz	F & S	I	
CO 8	Justify Sutrashtane tu	Cognitive	Must know	Knows	Lecture & Group	Written	F & S	I	

CO 9	vagbhata	e/K			Discussion	MCQ			
CO 8 CO 9	Enumerate the salient features of Bhela Samhita	Cognitiv e/k	Desirable to know	Knows	Lecture & Group Discussion, SDL	Written MCQ	F	I	
CO 8 CO 9	Enumerate the salient features of Hareeta Samhita	Cognitiv e/k	Desirable to know	Knows	Lecture & Group Discussion, SDL	Written MCQ	F & S	I	
CO 8 CO 9	Describe the Structure, Specialties, Time period of Kashyapa Samhita	Cognitiv e/k	Must know	Knows	Lecture & Group Discussion	Written MCQ Chart or collage of Events	F & S	I	
CO 8 CO 9	Briefly explain contribution of Kashyapa, Jeevaka, Vatsya.	Cognitiv e/k	Must know	Knows	Lecture & Group Discussion	Written MCQ	F & S	I	
CO 8 CO 9	Identify contribution of Kashyapa Samhita to the field of Pediatrics.	Cognitiv e/k	Must know	Knows	Lecture & Group Discussion	Written MCQ	F & S	I	
Topic 4- Time (Lecture:- 1 hour, Non lecture 3 hours)									
CO 8 CO 9	Describe Structure, Contributions and importance of Madhava Nidana.	Cognitiv e/k	Must know	Knows	Lecture & Group Discussion, Library Session for handing of books.	Written MCQ Library Searching online available Samhitas. Samhita mobile applications	F & S	II	
CO 8 CO 9	Outline the importance of Madhavakara, Vijayarakshita, Shrikanthadatta and Justify nidane madhava shreshtha.	Cognitiv e/k	Must know	Knows	Lecture & Group Discussion	Written MCQ	F & S	II	Roganidana
CO 8	Describe Structure,	Cognitiv	Must know	Knows	Lecture & Group	Written	F & S	II	

CO 9	Contributions and importance of Sharngadhara Samhita.	e/k			Discussion	MCQ			
CO 8 CO 9	Briefly explain contribution of Sharngadhara, Adhamalla, Kashiram.	Cognitiv e/k	Must know	Knows	Lecture & Group Discussion	Written MCQ	F & S	II	
CO 8 CO 9	Explain about Bhavamishra and Enumerate the salient features of Bhavaprakasha.	Cognitiv e/k	Must know	Knows	Lecture & Group Discussion,	Written MCQ	F & S	II	
Topic 5- Time (Lecture:- 1 hour, Non lecture 2 hours)									
CO 8 CO 9	Enlist origin and period of different systems of medicine in the world.	Cognitiv e/k	Must know	Knows	Lecture & Group Discussion	Written MCQ Assignment s	F & S	II	
Topic 6- Time (Lecture:- 0 hour, Non lecture 1 hours)									
CO 8 CO 9	Explain in brief about Ashwayurveda, Gajayurveda, Gavayurveda and Vrukshayurveda.	Cognitiv e/k	Must know	Knows	Lecture (Included in Transitional Curriculum)& Group Discussion	Written MCQ Serach of Use of Ayurved plats in different cattle food. Poster making	F & S	II	
Topic 7- Time (Lecture:- 1 hour, Non lecture 2 hours)									
CO 8 CO 9	Describe the Status of Ayurveda during the period of Ashoka, Mughal and British rule.	Cognitiv e/K	Desirable to know	Knows	Lecture & Group Discussion, SDL	Written MCQ Collect the photos online and make a documentor	F & S	II	

						y in your voice.			
Topic 8- Time (Lecture:- 1 hour, Non lecture 2 hours)									
CO 8 CO 9	Name the Contributions of Acharya Gana Nath Sen, Vaidya Yamini Bhushan Rai, Vaidya Shankar Dajishastri Pade, Acharya Swami Lakshmiram, Acharya Yadavji Tikramji, Dr. PM. Mehta, Vaidya B G Ghanekar, Vaidya Damodar Sharma Gaur, Acharya Priyavrat Sharma, Vaidya C Dwarakanath, Vaidya K R Shrikantamurthy, Vaidya VJ Thakkar, Vaidyaratnam PS Varier, Vaidya B V Gokhale.	Cognitive/K	Desirable to know	Knows	Lecture & Group Discussion, Tutorial, Self directed learning (SDL)	Written MCQ, Quiz, Match the pair Edutainment Poster making, Video clip making, Compilation,	F & S	III	
Topic 9- Time (Lecture:- 1 hour, Non lecture 2 hours)									
CO 8 CO 9	Discuss Globalization of Ayurveda – Expansion of Ayurveda in Misra (Egypt), Sri Lanka, Nepal other nations.	Cognitive/K	Desirable to know	Knows	Lecture & Tutorial, Video Edutainment	Written MCQ Collect data and make video clip with your own narration.	F & S	III	
Topic 10- Time (Lecture:- 1 hour, Non lecture 2 hours)									

CO 8 CO 9	Enumerate the various Committees and 2-3 recommendations	Cognitive	Must know	Knows	Lecture	Written MCQ	F & S	III	
CO 8 CO 9	Explain activities of Department of AYUSH, CCIM/ NCISM, CCRAS	Cognitive/K	Must know	Knows	Lecture & Group Discussion, Tutorial	Written MCQ Visit to Website of the Departments and discussion	F & S	III	
CO 8 CO 9	Identify the institutes All India Institute of Ayurved, New Delhi, (AIIA), National Institute of Ayurveda, Jaipur. ITRA, Jamnagar. Faculty of Ayurveda, BHU, Varanasi. Rashtriya Ayurveda Vidyapeetha, New Delhi.	Cognitive/K	Desirable to know	Knows	Lecture & Group Discussion, Video	Written MCQ, Visit to web sites of colleges and Discussions	F & S	III	

List of Practicals

Hours: 180 Hrs

SN	Name of Practical Sanskrit	Term	Hours
P1	Use of Dictionaries and Shabdakoshas अमरकोशः, वनौषधिवर्गः, शब्दकल्पद्रुमः, वाचस्पत्यम्	I	15
P2	Translation from Sanskrit to desirable language.	II	15
P3	Translation from desirable language to Sanskrit.	II	15
P4	सम्भाषण भाषा पठनम् Spoken Sanskrit and Communication Skills	III	15
P5	All activity based practicals from above table are enlisted. (In table 2 and Table 3) They are as follows: <ol style="list-style-type: none">1. Presentation of videos about Maheshwar Sutra, Prayatna, Uccharana Sthanani etc.2. Graphical Representation of Vocal system3. Reading / Pronunciation4. Preparing different Shabdarupani and recitation5. Preparing different Kriyapadani.6. Practicals on Karakani.7. Practicals on Pratyayas8. Practicals on Sandhis9. Practicals on Samasa10. Practicals on Upasargas.11. Practicals on Avyayas12. Practicals on Visheshan – Visheshya13. Practicals on Anvay lekhana14. Practicals on Nirukti15. Practicals on Paribhasha16. Practicals on Panchatantra	I I I I/II I I/II II II II II II II I/II/III II/III I/II/II III	120 hours

Table 4: Learning objectives (Practical) of AyUG- SN & AI

Sanskrit Practical									
A4 Course outcome	B4 Learning Objective (At the end of the session, the Students should be able to)	C4 Domain/sub	D4 Must to know/ desirabl e to know/Ni ce to know	E4 Level Does/ Shows how/ Knows how/ Know	F4 T-L method	G4 Assessment	H4 Formativ e /summati ve	I4 Te rm	J4 Integratio n
Practical 1- अमरकोशः -वनौषधिवर्गः, शब्दकल्पद्रुमः, वाचस्पत्यम्, Dictionaries Time: 15 Hrs (Practical/ Clinical 15 hours)									
CO 5	Refer the dictionaries. Refer the Books on synonyms	Cognitive domain - comprehension	Must to know	knows	Demonstration for identifying the meaning of the words with the support of the shabdakoshas like Amarkosha, Shabda kalpadruma, vachaspatyam etc. Record writing	Oral	F & S	I	
CO 5, 6	Improve the vocabulary. Use in reading and writing.	Cognitive domain - comprehension	Desirable to know	knows	Group Discussions Record writing	Oral Recitation Competitions Aksharashloka competitions etc.	F & S	II	
Practical 2 - Translation from Sanskrit to desirable language. Time: 15 Hrs. (Practical/ Clinical 15 hrs)									
CO 3, 4, 5, 6	Translate from Sanskrit to	Cognitive domain -	Must to know	Shows how	Demonstration Group Activity	Oral Written	F & S	II	

	desirable language.	comprehension, synthesis.			Record writing				
Practical 3 - Translation from desirable language to Sanskrit. Time: 15 Hrs. (Practical/ Clinical 15 hrs)									
CO 3, 4, 5, 6	Translate from desirable language to Sanskrit.	Cognitive domain - comprehension, synthesis.	Must to know	Shows how	Demonstration Group Activity Record writing	Oral Written	F & S	II	
Practical 4- सम्भाषण भाषा पठनम् Spoken Sanskrit Time: 15 Hrs (Practical/ Clinical 15 hrs)									
CO 6, 7	Apply Sanskrit grammar. Write a small paragraph or Script. Speak atleast 5 to 10 lines in Sanskrit fluently. Stage a skit.	Cognitive domain - comprehension. Psychomotor domain – articulation Psychomotor domain – articulation	Must to know	Shows how	Staging small skits. Script writing, elocution competitions. Games Conversation Peer learning Creating conversations Conversations in different situations by the students.	Oral	F & S	III	
P5 All activity based practicals from above table are enlisted. (In table 2 and Table 3) They are as follows: (NLH 120)									
<ol style="list-style-type: none"> 1. Presentation of videos about Maheshwar Sutra, Prayatna, Uccharana Sthanani etc. 2. Graphical Representation of Vocal system 3. Reading / Pronunciation 4. Preparing different Shabdarupani and recitation 5. Preparing different Kriyapadani. 6. Practical on Karakani. 7. Practical on Pratyayas 									

8. Practicals on Sandhis
9. Practicals on Samasa
10. Practicals on Upasargas.
11. Practicals on Avyayas
12. Practicals on Visheshan - Visheshya
13. Practicals on Anvay lekhana
14. Practicals on Nirukti
15. Practicals on Paribhasha
16. Practicals on Panchatantra

Table 5: Non Lecture Activities Course AyUG- SN & AI

List non lecture Teaching-Learning methods	No of Activities	Total
Sanskrit		
Presentation of videos	2	120
Graphical Representation of Vocal system	1	
Guided Reading,	5	
Peer learning	4	
PBL	36	
Quizes, puzzles, cross word, word cloud	13	
Group activities	37	
SDL	17	
Recitation	5	
Practical (Refer Table 4	60	
Ayurved Itihas	20	20
		200

Topic wise details –

List non lecture Teaching-Learning methods	No of Activities
Presentation of videos about Maheshwar Sutra, Prayatna, Uccharana Sthanani etc.	2
Graphical Representation of Vocal system	1
Reading / Pronunciation (Guided Reading, Peer learning)	7
Preparing different Shabdarupani and recitation (PBL, Peer learning, Quizes, word cloud, crosswords, recitation etc.)	14
Preparing different Kriyapadani. (PBL, Group activities)	5
Practicals on Karakani. (PBL, Group Discussions)	10
Practicals on Pratyayas. (PBL, Group Discussions)	6
Practicals on Sandhis (PBL, Quizes, puzzles, Group activities)	10
Practicals on Samasa (PBL, Quizes, puzzles,)	10
Practicals on Upasargas. (PBL, group activities)	3
Practicals on Avyayas (PBL, group activities)	3
Practicals on Visheshan – Visheshya (PBL)	3
Practicals on Anvay lekhana (PBL, SDL, Group Discussions)	14
Practicals on Nirukti (PBL, SDL, Group Discussions)	13
Practicals on Panchatantra - Vachya of sentences, Writing sentences using appropriate Shabdarupani and Kriyapadani etc. (SDL, PBL, group activities)	4
Practicals on Paribhasha (PBL, SDL, Group Discussions)	15
	120

Ayurved Itihas-

List non lecture Teaching-Learning methods	No of Activities
Group Discussion,	10
Video clips	5
Online Search, Prroject	
Tutorial	5
Quiz, Collage, Puzzle	
	20

Table 6: Assessment Summary

6 A-Number of Papers and Marks Distribution

S.No.	Subject Code	Papers	Theory	Practical/Clinical Assessment					Grand Total
				Practical/Clinical	Viva	Electives	IA	Sub Total	
1.	AyUG-SN & AI	2	200	-	75*	10 (Set-FA)	15	100	300
*Viva voce examination shall be for Sanskrit and not for Ayurved Ithihasa									

6 B - Scheme of Assessment (formative and Summative)

SR.NO.		PROFESSIONAL COURSE	DURATION OF PROFESSIONAL COURSE		
			First Term (1-6 Months)	Second Term (7-12 Months)	Third Term (13-18 Months)
1	AyUG- SN & AI	First	3 PA & First TT	3 PA & Second TT	3 PA & UE
PA: Periodical Assessment; TT: Term Test; UE: University Examinations					

6 C - Calculation Method for Internal assessment Marks (15 Marks)

TERM	PERIODICAL ASSESSMENT*					TERM TEST**	TERM ASSESSMENT	
	A	B	C	D	E	F	G	H
	1 (15 Marks)	2 (15 Marks)	3 (15 Marks)	Average (A+B+C/3)	Converted to 15 Marks (D/15*15)	Term Test (Marks converted to 15) (15 Marks)	Sub Total /30 Marks	Term Assessment (.../15)
FIRST							E+F	(E+F)/2
SECOND							E+F	(E+F)/2
THIRD						NIL		E
Final IA	Average of Three Term Assessment Marks as Shown in 'H' Column.							
	Maximum Marks in Parentheses *Select an Evaluation Methods which is appropriate for the objectives of Topics from the Table 6 D for Peroadic assessment. Conduct 15 marks assessment and enter marks in A, B, and C. ** Conduct Theory (100 Marks)(MCQ(20*1 Marks), SAQ(8*5), LAQ(4*10)) and Practical (100 Marks) Then convert total marks to 15 marks.							

6 D- Evaluation Methods for Periodical Assessment

S. No.	Evaluation Methods
1.	Activities Indicated in Table 3 - Column G3 as per Indicated I, II or III term in column I3.
2.	Practical / Clinical Performance
3.	Viva Voce, MCQs, MEQ (Modified Essay Questions/Structured Questions)
4.	Open Book Test (Problem Based)
5.	Summary Writing (Research Papers/ Samhitas)
6.	Class Presentations; Work Book Maintenance
7.	Problem Based Assignment
8.	Objective Structured Clinical Examination (OSCE), Objective Structured Practical Examination (OPSE), Mini Clinical Evaluation Exercise (Mini-CEX), Direct Observation of Procedures (DOP), Case Based Discussion (CBD)
9.	Extra-curricular Activities, (Social Work, Public Awareness, Surveillance Activities, Sports or Other Activities which may be decided by the department).
10.	Small Project
11.	Specific Periodic Assessment AyUG- SN & AI Sanskrit (3 PA / term) Quiz, Puzzles, Word cloud, Cross words, Preparation of charts, mindmaps, Assignments, Open book test, Recitation. Sanskrit Topics 8 and 9 शब्दरूपाणि and धातुरूपाणि from paper I can be asked for recitation, word cloud, crossword etc. in all Terms Test and viva or any from above table. Ayurved Itihas (3 PA/term) Quiz, Puzzles, Word cloud, Cross words, Preparation of charts, mindmaps, Assignments, Open book test, Video Clips making. Any of Evaluation Methods for Periodical Assessment

6 E- Paper Layout

I PROFESSIONAL BAMS EXAMINATIONS

AyUG SN & AI

PAPER-I

Time: 3 Hours Maximum Marks: 100

INSTRUCTIONS: All questions compulsory

TOTAL MARKS 100 Sanskrit

		Number of Questions	Marks per question	Total Marks
Q 1	Multiple Choice Questions (MCQ) All Sanskrit	20	1	20
Q 2	Short answer questions (SAQ) All Sanskrit	8	5	40
Q 3	Long answer questions (LAQ) All Sanskrit	4	10	40
				100

I PROFESSIONAL BAMS EXAMINATIONS

AyUG SN & AI

PAPER-II

Time: 3 Hours

INSTRUCTIONS: All questions compulsory

TOTAL MARKS 100 = [Sanskrit, (LAQ and SAQ) 80 marks + Ayurved Itihas, (MCQ) 20 marks]

		Number of Questions	Marks per question	Total Marks
Q 1	Multiple Choice Questions (MCQ) Ayurved Itihas, (all 20)	20	1	20
Q 2	Short answer questions (SAQ) All Sanskrit	8	5	40
Q 3	Long answer questions (LAQ) All SaAnskrit	4	10	40
				100

6 F- Disribution of Theory Exam

Paper I: Sanskrit		D Type of Questions “Yes” can be asked. “No” should not be asked.				
A List of Topics	B Term	C Marks	MCQ (1 Mark)	SAQ (5 Marks)	LAQ (10 Marks)	
1	संस्कृतवर्णानाम् परिचयः – माहेश्वरसूत्राणि, उच्चारणस्थानानि, बाह्यप्रयत्नानि, अभ्यन्तर प्रयत्नानि	I	05	5	No	No
2	संज्ञा- 2.1 - संयोगः, संहिता, ह्रस्वदीर्घप्लुतः, अनुनासिकः, पदम्, धातुः, उपसर्गः, गुणः, वृद्धि 2.2 - इत्, लोपः, प्रत्याहारः, उदात्तः, अनुदात्तः, स्वरितः, सवर्णः, निपातः, प्रगृह्यम्,	2.1 – I 2.2 – II	05	5	No	No
3.	उपसर्गाः- उपसर्गाः क्रियायोगे प्र, परा, अप, सम्, अनु, अव, निस्, निर, दुस्, दुर्, वि, आङ्, नि, अपि, अधि, अति, सु, उत्, अभि, प्रति, परि, उप	II	05	No	Yes (1 que of 5 marks)	No
4.	अव्ययानि 4.1 - च अपि खलु हि तु किल ननु वा च एव 4.2- पुनः विना उच्चैः ऋते एवम् सह सार्धम् युगपत् यथा – तथा यावत्-तावत् इति यदा-तदा यदि- तर्हि साकम् न कुत्र कति कुतः किमर्थम्, कियत् इह अत्र तत्र सर्वत्र अन्यत्र कुत्र एकत्र सदा अन्यथा एकथा A) Identify अव्ययानि B) Explain the meaning with reference to the context C) Construct the sentences using अव्ययानि	I A II B III C	5	No	Yes (1 que of 5 marks)	No
5.	कारकप्रकरणम् तथा वाच्य प्रयोगः – कर्तृकारकम्, कर्मकारकम्, करणकारकम्, सम्प्रदानकारकम्, अपादान कारकम्, अधिकरणकारकम्, सम्बन्धः, उपपदविभक्तिः A) Discriminate the विभक्ति and their meaning. B) Identify the karakas from Ayurveda texts like करणम् कारणम् C) Construct sentences D) Translate sentences from English to Sanskrit & from Sanskrit to English.	I A II B III C, D	15	5	Yes (1 que of 5 marks)	Yes (1 que of 5 marks)

<p>6.</p>	<p>सन्धिः 6.1 - अच् सन्धिः/स्वरसन्धिः - यण् सन्धि- इको यणचि, गुण सन्धि=आहुणः वृद्धिसन्धि-:वृद्धिरोचि, अयवायाव सन्धिः - एचोऽयवायाव/ःवान्तो यि प्रत्यये, लोप सन्धि-:लोप :शाकल्यस्य, पररूपसन्धि-:एडि पररूपम्, पूर्वरूपसन्धि- एडः पदान्तादति, प्रकृतीभाव- सर्वत्र विभाषा गोः , प्लुत प्रगृह्य अचि नित्यम् 6.2 - हल्सन्धिः /व्यञ्जनसन्धिः - श्रुत्वसन्धि -:स्तो : श्रुना श्रुः, ष्रुत्वसन्धि -:श्रुना ष्रुः, जश्त्व सन्धि-:झलां जशो/न्ते, अनुनासिकसन्धि-:यरोऽनुनासिकेऽनुनासिको वा/प्रत्यये भाषायां नित्यम्, परसवर्णसन्धि-:तोर्लि/ःवा पदान्तस्य, चर्त्वसन्धिः खरि च, पूर्वसवर्णसन्धि-:झयोऽहोऽन्यतरस्याम्, छुत्वसन्धिः शश्छोऽटि /छत्वममीति वाच्यम्, अनुस्वारसन्धि - : मोऽनुस्वारः, तुगागमसन्धि-: शि तुक्/छे च/पदान्ताद्वा, रुत्वआदेशसन्धि-: नश्छव्यप्रशान् 6.3 - विसर्गसन्धिः - रुत्वसन्धि-:ससजुषो रुः, उत्त्वसन्धि-: अतो रोरप्लुदादप्लुते/हशि च, रो रि, भो भागो अघो अपूर्वस्य योऽशि , रोऽसुपि , एतत्तदोः सुलोपोऽकोरनञ् समासे हलि, सोऽचि लोपे चेत् पादपूरणम् 6.4.- रुत्वप्रकरणसन्धि-: [सङ्क्षिप्य पाठनम् – Brief teaching] सम :सुटि, कानाम्नेडिते च, अत्रानुनासिको पूर्वस्य तु वा,अनुनासिकात्परोऽनुस्वारः, खरवसानयोर्विसर्जनीयः, विसर्जनीयस्य सः,सम्पुडकानां सो वक्तव्यः </p>	<p>II</p>	<p>15 (6.1-5marks 6.2/6.4-5marks 6.3 – 5marks)</p>	<p>No</p>	<p>Yes (1 que of 5 marks)</p>	<p>Yes 10 (1 Que. of 10 marks)</p>
<p>7.</p>	<p>समास 7.1 - अव्ययीभावसमासः - 7.1.1 - अव्ययम् विभक्तिसमीपसमृद्धिव्यर्थार्थाभावात्ययसम्प्रतिशब्दप्रादुर्भावाव श्वायथानुपूर्व्ययौगपद्यसादृश्यसम्पत्तिसाकल्यान्तवचनेषु 7.1.2. - प्रथमा निर्दिष्टम् उपसर्जनम्, / उपसर्जनं पूर्वम् /नाव्ययीभावादतो/ म् त्वपञ्चम्या/ः तृतीयासप्तम्योर् बहुलम्/अव्ययीभावे चाकाले 7.2. - तत्पुरुष समासः - द्वितीया श्रितातीतपतितगतात्यस्तप्राप्तपन्नैः, तृतीया तत्कृतार्थेन गुणवचनेन, कर्तृकरणे कृता बहुलम्, चतुर्थी तदर्थार्थ बलिहितसुखरक्षितैः, पञ्चमीभयेन, षष्ठी, सप्तमीशौण्डे , विशेषणं विशेष्येणबहुलम् ,उपमानानि सामान्यवचनैः, नञ् ,कर्मधारय ,द्विगुः उपपद तत्पुरुष</p>	<p>II</p>	<p>15 (7.1.1 &7.1.2 -- 5marks 7.1.3 – 5marks 7.14 & 7.15 – 5marks)</p>	<p>No</p>	<p>Yes (1 que of 5 marks)</p>	<p>Yes 10 (1 Que. of 10 marks)</p>

	<p>7.3 - बहुव्रीहि समास - : अनेकमन्यपदार्थे</p> <p>7.4 - द्वन्त्वसमास - : चार्थे द्वन्द्वः</p>					
8.	<p>शब्दरूपाणि</p> <p>8.1 - पुल्लिङ्ग शब्दरूपाणि</p> <p>अकारान्तः - वात, वैद्य, रुग्ण, राम आदि इकारान्तः - अग्नि, मुनि आदि उकारान्तः - ऋतु, भानु गुरु आदि ऋकारान्तः - नृ, धातृ, पितृ आदि ओकारान्तः - गो आदि नकारान्त - श्लेश्मन्, रोगिन्, ज्ञानिन् आदि सकारान्त - चन्द्रमस् आदि तकारान्त - मरुत् आदि दकारान्त - सुहृद् आदि जकारान्त - भिषज् आदि शकारान्तः - कीदृश, एतादृश आदि</p> <p>8.2 - स्त्रीलिङ्ग शब्दरूपाणि</p> <p>आकारान्त :- बला, कला, स्थिरा, माला आदि इकारान्तः - सम्प्राप्ति, प्रकृति, मति आदि ईकारान्तः - धमनी, नदी आदि उकारान्तः - रज्जु, धेनु आदि ऊकारान्तः - वर्षाभू, वधू आदि ऋकारान्त :- मातृ आदि चकारान्तः - वाच् आदि तकारान्तः - योषित्, सरित् आदि दकारान्तः - परिषद् आदि जकारान्तः - स्रज् आदि सकारान्तः - जलौकस्, सुमनस् आदि षकारान्तः - प्रावृष् आदि</p> <p>8.3 - नपुंसकलिङ्ग शब्दरूपाणि</p> <p>अकारान्तः - पित्त, वन आदि उकारान्तः - अश्रु, मधु आदि इकारान्तः - अक्षि, अस्थि, वारि, दधि आदि ऋकारान्तः - ज्ञातृ, धातृ आदि नकारान्तः - वर्त्मन्, दण्डिन् आदि सकारान्तः - स्रोतस्, मनस् आदि षकारान्तः - सर्पिष्, आयुष् आदि तकारान्तः - शकृत्, जगत् आदि</p> <p>8.4- सर्वनामपदानि - अस्मद्, युष्मद्, तद्, एतद्, यद्, किम्, इदम् आदि</p>	I	10	No	Yes (1 que of 5 marks)	Yes (1 que of 5 marks)
9.	<p>धातुरूपाणि-</p> <p>9.1 - परस्मैपदि - लट्/लृट्/लङ्/विधिलिङ्/लोट् भ्वादि गण - भू सत्तायाम्, क्षि क्षये, गम्/गम् (गतौ, पा</p>	I	10	No	Yes (1 que of 5 marks)	Yes (1 que of 5 marks)

<p>पाने, जीव्, पच्, त्यज् ,दृश्(पश्य) अदादि गण - अद् भक्षणे , हन् हिम्सागत्योः, वा गतिगन्धनयोः पा रक्षणे ,अस्, श्वस्स्वप ,् ब्रू, जुहोत्यादि गण- धा धारणपोषणयोः, पृ - पलनपूरणयोः, हा त्यागे ,दा (दाञ्) दिवादि गण- दिवु क्रीडादौ, त्रसी उद्वेगे, पुष् पुष्टौ, कुप्, नश्, तुष्, स्निह्, जृ स्वादि गण- चिञ् चयने, शक्श्चु, तुदादि गण- तुद् व्यथने, कृष् विलेखने ,लिख् लेखने ,दिश्, कृन्त्, क्षिप्, स्पृश् रुधादि गण- रुधिर् आवरणे, भिदिर् विदारणे , भुज् तनादि गण- तनु विस्तारे, कृञ् करणे क्रयादि गण- प्रीञ्- तर्पणे कान्ते च, ग्रह् उपादाने ज्ञा चुरादि गण- गण् संस्थाने, साध्, ताड्, धृ, कथ् वाक्यप्रबन्धे आत्मनेपदि - भ्वादि गण - वृतु वर्त्तने ,वृध्(वर्ध्), लभ्, सेव्, रुच् अदादि गण - शीङ् स्वप्नेब्रू, जुहोत्यादि गण- धा धारणपोषणयो ,:दा (दाञ्), दिवादि गण- जनी प्रादुर्भाव ,मन्, बुध्, पद्, विद् स्वादि गण- चिञ् चयने, तुदादि गण- तुद् व्यथने, कृष् विलेखने ,मि, विद्, मुच्, सिञ्च्, रुधादि गण- रुधिर् आवरणे, भिदिर् विदारणेभुज् ,् तनादि गण- तनु विस्तारे, कृञ् करणे क्रयादि गण- प्रीञ्- तर्पणे कान्ते च, ग्रह् उपादानेज्ञ ,ा चुरादि गण- चूर्,क्षाल्, कथ्, घोष्, भक्ष् आयुर्वेदसंहितासु विद्यमानानां धतुरूपाणां परिचयीकरणम् अभिकाम्यम् 9.2 - लृङ्ग , आशीर्लिङ्ग, लिट , लुङ्ग, लुड [सङ्क्षिप्य पाठनम्-Brief teaching] भ्वादि गण ,अदादि गण , जुहोत्यादि गण ,दिवादि गण ,स्वादि गण ,तुदादि गण ,रुधादि गण ,तनादि गण ,क्रयादि गण ,चुरादि गण पूर्वोक्तधातुष्वेकस्य पञ्चलकारेषु रूपाणि दर्शयेत् परं परीक्षायाम् न पृष्टव्यानि </p>					
<p>10 प्रत्ययाः 10.1 – क्त - क्तवत् ,तव्यत् – अनीयर् ,शत् – शानच् , ल्युट् - ण्वुल् ,क्त्वा - ल्यप् ,णिनि ,:क्तिन्, तुमुन् प्रत्ययाणाम् प्रयोगाः एव पृष्टव्याः 10.2 - भावे घञ् ,करणे घञ् ,भावे ष्यञ् ,कर्मणि ण्यत् , कर्त्तरि अच् अप् आयुर्वेदसंहितायां विद्यमानानां भावे/करणे/कर्त्तरि/ताच्छील्ये/ आदि प्रत्ययानां परिचयः:करणायः परं परीक्षायाम् न</p>	<p>I</p>	<p>10</p>	<p>3</p>	<p>Yes (2 Que of 1 mark)</p>	<p>Yes (1 que of 5 marks)</p>

	पृष्टव्या : परीक्षायाम् वाच्य प्रयोगः स्वरूपे पृष्टव्य :					
11	विशेषण विशेष्य	II	05	2	Yes (3 Que of 1 mark)	No

Paper II Sanskrit and Ayurved Itihas		D Type of Questions "Yes" can be asked. "No" should not be asked.				
Part A Sanskrit List of Topics	B Term	C Mar ks	MCQ (1 Mar k)	SAQ (5 Marks)	LAQ (10 Marks)	
1 निरुक्ति तथा पर्याय पदानि— A) आयुः ,शरीर, मनः, अग्नि, जलम्, वातः, पित्तम्, कफः B) रस, रक्त, मांस, मेद, अस्थि, मज्जा, शुक्र , इन्द्रियम्,श्रोत्रः, चक्षुः, रसना ,, घ्राण (C धी, धृति, स्मृति, बुद्धी, मति , प्रज्ञा ,मूत्र ,पुरीषः, स्वेद, आत्मा, रोगः, निदानम् ,रोगि ,: भेषजचिकित्सा , आदि	A - I B – II C- III	15	No	Yes (2 que of 5 marks)	Yes (1 que of 5 marks)	
2 परिभाषापदानि – A) आयुर्वेदः, पञ्चमहाभूतानि, त्रिगुणम्, दोषाः, मलाः, दूष्यम्, सम्सर्गः, सन्निपातः B) द्रव्य, गुण, कर्म, सामान्य, विशेष, गुरु, लघु, प्रकृतिः, विकृतिः, चयः, प्रकोपः, प्रसरः, स्थानसम्प्रयः, दोषगतिः भेदः, रसः, वीर्यम्, विपाकः, कार्यकारणभावः C) स्रोतस् , कोष्ठः, आमम्, विरुद्धाहम्, विरुद्धाहारः, विदाहि, विष्टम्भि, सात्म्यम्, ओकसात्म्यम्, देशसात्म्यम्, अत्यशनम्, अध्यशनम्, स्थानी, योगवाही, पथ्यम्, अपथ्यम्, कृतान्नवर्गः, अवस्थापाकः, वेगः ,शोधन, शमन , लंघन , बृहण, अनुपान आदि	A - I B - II C- III	20	No	Yes (2 que of 5 marks)	Yes (1 Que. of 10 marks)	
3. अन्वयलेखनम् - A) अष्टाङ्गहृदयम् सूत्रस्थानम् –अध्यायत :सर्वाणि सूत्राणि १. आयुष्कामीयम् २. दिनचर्या ३. रोगानुत्पादनीयम् B) अष्टाङ्गहृदयम् सूत्रस्थानम् –अध्यायत :सर्वाणि सूत्राणि दोषादिविज्ञानीयम् दोषभेदीयम् दोषोपक्रमणीयम् द्विविधोपक्रमणीयम् C) वैद्यकीय सुभाषितसाहित्यम् – shloka numbers - प्रथमः 1, 2 द्वितीयः 1, 7 तृतीयः 9	A- I B - II C - III	30 (A B C 10 mark s each)	No	Yes (3 que of 5 marks)	Yes (1 Que. of 10 marks and 1 Que of 5 marks as part A of Que. 3)	

	चतुर्थः 2, 3 पञ्चमः 2, 3 षष्ठः 1, 4, 7 सप्तमः 2, 5, 17 अष्टमः 13, 12 नवमः 12, 13 दशमः 1, 19 एकादशः 1, 2 द्वादशः 1, 6 त्रयोदशः 1, 7, 8, 9 चतुर्दशः 2, 3, 4 पञ्चदशः 7, 10 षोडशः 5, 6 सप्तदशः 1, 4 अष्टादशः 1, 2, 3 एकोनविंशतिः 2, 3, 4 विंशतिः , 12, 3, 4					
4.	पञ्चतन्त्र-अपरीक्षितकारकम् ५ अध्याय	III	15	No	Yes (1 que of 5 marks)	Yes (1 que of 10 marks)
	Part B Ayurved Itihas					
	All Topics			Yes	No	No

6 G- Question paper blue print Paper I – Sanskrit

A Question Sr. No	B Type of Question	C Question Paper Format
Q1	Multiple choice Questions (MCQ) 20 Questions 1 mark each All compulsory Must know part 15 MCQ, Desirable to know 3 MCQ. Nice to Know 2 MCQ	1. Topic number 1 2. Topic number 1 3. Topic number 1 4. Topic number 1 5. Topic number 1 6. Topic number 2 7. Topic number 2 8. Topic number 2 9. Topic number 2 10. Topic number 2 11. Topic number 5 12. Topic number 5 13. Topic number 5 14. Topic number 5 15. Topic number 5

		<p>16. Topic number 10 17. Topic number 10 18. Topic number 10 19. Topic number 11 20. Topic number 11</p>
Q2	<p>Short answer Questions (SAQ) 8 questions 5 marks for each que. All compulsory</p> <p>Must know part 7 questions, 1 question on Desirable to know. No Questions on Nice to know.</p>	<p>Q1 Topic 6 अधोदत्तानां पदानां सन्धिं छित्वा वा योजयित्वा लिखत (5 Que x 1 marks each) Q2 Topic 7 अधोदत्तानां पदानां विग्रहवाक्यं समस्तपदं वा लिखत 5 Que x 1 mark each Q3 Topic 4 - अधोदत्तैः अव्ययपदैः रिक्तस्थानम् पूरयत 5 Que x 1 mark each Q4 Topic 8 - शब्दरूपाणि लिखत (5 Que x 1 mark each) Q5 Topic 3 - उपसर्गाः (स्व)वाक्येषु योजयत 5 Que x 1 mark each Q6 Topic 10 and 11- (स्व)वाक्येषु योजयत – 5 Que x 1 mark each Q7 Topic 9 - धातुरूपाणि लिखत 5 Que x 1 mark each Q8 Topic 5, 6 – अधोदत्ते श्लोके रेखाङ्गितानां पदानां कारकसंबन्धं विशदीकृत्वा / निश्चयीकृत्वा तदनुसृत्य पदानां अर्थं लिखतु (shlokas should be taken from the syllabus.) 5 Que x 1 mark each</p>
Q3	<p>Long answer Questions (LAQ) All compulsory 4 questions 10 marks for each que.</p> <p>All questions on must know. No Questions on Nice to know and Desirable to know.</p>	<p>Q1 Topic 8, 5 – उचितं शब्दरूपं विलिख्य वाक्ये योजयत 5 Que. X 2 mark Q2 Topic 7 - अधोदत्तेषु श्लोकेषु रेखाङ्गितानां समस्तपदानां विग्रहवाक्यं समस्तपदम् वा समासनाम्ना सह लिखत (Underline 5 Samast padas or give 5 Vighra vakyas from a 5 to 7 line passage or 2 to 3 shlokas from the syllabus.) 5 Que. X 2 marks Q3 Topic 6 - अधोदत्ते परिच्छेदे रेखाङ्गितानां सन्धिं छित्वा वा योजयित्वा सन्धि सूत्रम् च लिखत (Underline 5 Sandhi padas or Sandhi Vighrahas from a 5 to 7 line passage or 2 to 3 shlokas from the syllabus.) 5 Que. X 2 marks Q4 Topic 5, 9, 10 - अ) अधोदत्तस्य धातोः तव्यत् तुमुन् ल्यप् क्वत् शतृ/शानच् प्रत्ययरूपाणि लिखत 5 Que. X 1 marks आ) वाच्य प्रयोगः 5 Que. X 1 marks (Sentences should be taken from syllabus Panchatantra.)</p>

AyUG SN & AI :

Paper II – Sanskrit and Ayurved Itihas

A Question Sr. No	B Type of Question	C Question Paper Format
Q1	<p>Multiple choice Questions (MCQ) Ayurved Itihas 20 Questions</p> <p>1 mark each</p> <p>All compulsory</p> <p>Must know part 15 MCQ, Desirable to know 3 MCQ. Nice to Know 2 MCQ</p>	<p>All Questions From Ayurved Itihas.Paper II Part B</p> <ol style="list-style-type: none"> 1. Topic number 1/2 2. Topic number 3/4 3. Topic number 5/6 /7 /8 4. Topic number 9/ 10 5. Topic number 1/2 6. Topic number 3/4 7. Topic number 5/6 /7 /8 8. Topic number 9/ 10 9. Topic number 1/2 10. Topic number 3/4 11. Topic number 5/6 /7 /8 12. Topic number 9/ 10 13. Topic number 1/2 14. Topic number 3/4 15. Topic number 5/6 /7 /8 16. Topic number 9/ 10 17. Topic number 1/2 18. Topic number 3/4 19. Topic number 5/6 /7 /8 20. Topic number 9/ 10
Q2	<p>Short answer Questions (SAQ) Sanskrit All compulsory 8 questions 5 marks for each que.</p> <p>Must know part 7 questions, 1question on Desirable to know. No Questions on Nice to know.</p>	<ol style="list-style-type: none"> 1. Topic number 3 अधोदत्तस्य श्लोकस्य पदच्छेदं लिखित्वा रेखाङ्गितानां पदानां शब्दरूपाणि धातुरूपाणि वा लिखत 2. Topic number 3 अधोदत्तस्य श्लोकस्य अन्वयम् अर्थम् च लिखत 3. Topic number 2/3 अधोदत्तस्य श्लोकस्य अन्वयम् अर्थम् च लिखत 4. Topic number 3/ 4 प्रयोगं विपरिणमयत 5 Que x 1 markeach 5. Topic number 2 अधोदत्तानाम् टिप्पणिलिखत 6. Topic number 1 शब्दस्य निरुक्तिं तथा पर्यायवचनानि च लिखत 7. Topic number 3/4 संस्कृत भाषायां अनुवदत 8. Topic number 3/4 मातृभाषायां अनुवदत
Q3	<p>Long answer Questions (LAQ) Sanskrit All compulsory 4 questions 10 marks for each que.</p>	<ol style="list-style-type: none"> 1. Topic 4 अधोदत्तकथायाः साराम्शं सम्स्कृत भाषायाम् लिखत or Comprehension. 2. Topic 2 अधोदत्तानाम् टिप्पणिलिखत 2x5 (5 marks for each) 3. Topic 1, 3 <ol style="list-style-type: none"> A) प्रश्नानाम् पूर्णवाक्येन उत्तराणि लिखत 5 Que.X 1 Mark for each B) निरुक्तिं तथा पर्यायवचनानि च लिखत 5 Que. X 1 mark for each

	All questions on must know. No Questions on Nice to know and Desirable to know.	4. Topic 3 अधोदत्तस्य श्लोकस्य पदच्छेदं विग्रहवाक्यम् अन्वयः वाक्यार्थं शास्त्रार्थं च लिखत 5 Que. X 2 marks
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6 H - Distribution of Practical Exam

Practical 100 Marks – (Viva 75 + Elective 10 + IA 15) Marks

SN		Heads	Marks
A	VIVA (75)		
	1	Reading (structured approach)	10
	2	Shabdarupani and Karakani	10
	3	Sandhi and Padachcheda, Dhaturupani	10
	4	Samas	5
	5	Paribhasha, Nirukti	5
	6	Anvay	10
	7	Constructing sentences and conversation	10
	8	Compilation/ Record writing [Compilation/ Record writing book should contain 1. Anvay 2. Padachcheda 3. Samas 4. Shabdarupani 5. Dhaturupani 6. Bhavarth Of the 40 shlokas from Sanskrit Paper 2 topic numbers 3 A and B Ashtanga Hridayam and ten verses from Charak Samhita Sutrasthan 5 and 6 from Samhita Adhyayan - 1 subject.]	10
	9	Communication Skill	5
B	Internal Assessment (15)		15
C	Electives (10)		10
		Total Marks	100

7. References/ Resources

Sanskrit

Books

1. संस्कृतपाठ्यपुस्तकम् प्रथमः तथा द्वितीयभागः- Sanskrit for Ayurveda part- I and Part –II Published by CCIM New Delhi
2. आयुर्वेदस्य भाषा-पञ्चभागः- Ayurvedasya bhaSha part I to part –V samskrita samvardhana prathisthan mumbai
3. लघुसिद्धान्तकौमुदिः - वरदराज - Laghusiddhantakaumudi of bhattojidikshita
4. सिद्धन्तकौमुदि – भट्टोजिदीक्षितः siddhantakaumudi
5. वैद्यकीयसुभाषितसाहित्यम् - Vaidyakiyasubhashitasahityam, भास्कर गोविन्द घाणेकर, चौखम्बा प्रकाशन
6. पन्तन्त्रम् अपरीक्षितकारकम् - Pancatantra aparikshitakarakam 1 to 5 stories
7. शब्दकल्पद्रुमः - Sabdakalpadruma:
8. वाचस्पत्यम्- Vachaspatyam
9. अमरकोशः- Amarakosha
10. सिद्धारूपम् - Siddharupam
11. धातुपाठः- Dhatupatha
12. Sanskrit to English and English to Sanskrit Dictionary – Monier Williams
13. Sanskrit to Hindi and Hindi to Sanskrit Dictionary – Va. Shi. Apte
14. Sanskrit to Regional/ Desirable language dictionaries.
15. Ayurvediya Shabdakosha
16. Encyclopedic dictionary of Ayurveda – Dr. Kanjiv Lochan, Dr. P.S. Byadgi (Chaukhambha Publications)

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- Readymade Sanskrit Puzzles
<http://webapps.samskrutam.com/tools/CrosswordPuzzle.aspx>
- Learning Sanskrit - Pronunciation 1
<https://www.sanskrit-trikashaivism.com/en/learning-sanskrit-pronunciation-1-1/456>
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sanskritdocuments.org
http://sanskritdocuments.org/learning_tools/sarvanisutrani/allsutrani.htm
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<https://sanskrit.uohyd.ac.in/scl/>
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Ayurved Itihas

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2. Upodghata of Rasa Yogasagar Vaidya Hariprapanna Sharma
3. Ayurveda Ka Itihas KaviraSuram Chand
4. Ayurveda Sutra Rajvaidya Ram Prasad Sharma
5. History of Indian Medicine (1-3 part) Dr. GirindrNath Mukhopadhyaya
6. A Short history of Aryan Medical Science Bhagwat Singh
7. History of Indian Medicine J. Jolly
8. Hindu Medicine Zimer
9. Classical Doctrine of Indian Medicine Filiyosa
10. Indian Medicine in the classical age AcharyaPriyavrata Sharma
11. Indian Medicine (Osteology) Dr. Harnley
12. Ancient Indian Medicine Dr. P. Kutumbia
13. Madhava Nidana and its Chief Commentaries (Chapters highlighting history) Dr. G.J. Mulenbelt
14. Ayurveda Ka BrihatItihasa Vaidya Atridev Vidyalankara
15. Ayurveda Ka VaigyanikaItihasa Acharya Priyavrata Sharma
16. Ayurveda Ka PramanikaItihasa Prof. Bhagwat Ram Gupta
17. History of Medicine in India Acharya Priyavrata Sharma
18. Vedome Ayurveda Vaidya Ram GopalS hastri
19. Vedomein Ayurveda Dr. Kapil Dev Dwivedi
20. Science and Philosophy of Indian Medicine Dr. K.N. Udupa
21. History of Indian Medicine from Pre-Mauryan to Kushana Period Dr. Jyotirmitra
22. An Appraisal of Ayurvedic Material in Buddhist literature Dr. Jyotirmitra
23. Mahayana Granthon mein nihita Ayurvediya Samagri Dr. RavindraNathTripathi
24. Jain Ayurveda Sahitya Ka Itihasa Dr. Rajendra Prakash Bhatnagar
25. Ayurveda- Prabhashaka Jainacharya Acharya Raj Kumar Jain
26. CharakaChintana Acharya Priyavrata Sharma
27. Vagbhata Vivechana Acharya Priyavrata Sharma
28. Atharvaveda and Ayurveda Dr. Karambelkara
29. Ayurvedic Medicine Past and Present Pt. Shiv Sharma
30. Ancient Scientist Dr. O.P. Jaggi
31. Luminaries of Indian Medicine Dr. K.R. Shrikanta Murthy
32. Ayurveda Ke Itihasa Ka Parichaya Dr. RaviduttaTripathi
33. Ayurveda Ke Pranacharya Ratnakara Shastri
34. Ayurveda Itihasa Parichaya Prof. Banwari Lal Gaur

**COURSE CURRICULUM FOR FIRST PROFESSIONAL BAMS
(PRESCRIBED BY NCISM)**



**PADARTHA VIJNANAM
(SUBJECT CODE- AyUG-PV)
FUNDAMENTAL PRINCIPLES OF AYURVEDA AND QUANTUM
MECHANICS**

(Applicable from 2021-22 batch onwards for 5 years or until further notification by NCISM, whichever is earlier)



प्राणाभिसरः प्राणायतनानाम्

**BOARD OF AYURVEDA
NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE
NEW DELHI-110058**



Padartha

NCISM

I professional Ayurvedacharya (BAMS)

Subject Code: AyUG-PV

Padartha Vijnanam

FUNDAMENTAL PRINCIPLES OF AYURVEDA AND QUANTUM MECHANICS

Total number of Teaching hours: 230			
Lecture hours (LH) - Theory		90 Hours	90 Hours (LH)
Paper I	45 Hours		
Paper II	45 Hours		
Non-Lecture hours (NLH) – Theory		140 Hours	140 Hours (NLH)
Paper I	70 Hours		
Paper II	70 Hours		
Non-Lecture hours (NLH) - Practical		Hours	

Examination (Papers & Mark Distribution)					
Item	Theory Component Marks	Practical Component Marks			
		Practical	Viva	Elective	IA
Paper I	100	100	60	10 (Set-FB)	30
Paper II	100				
Sub-Total	200	200			
Total marks	400				

PREFACE

All Medical sciences whether ancient or modern, needs frequent updating. Acharya Vagbhata stresses upon reform of Ayurveda according to the present time (yuganurupasandarbha). The syllabus of Ayurveda also needs reformation for effective dissemination of principles of Ayurveda which is strongly based on Padarthavijnanam. Acharya Vagbhata says one who seeks long life should respect Ayurveda by four strategies that are knowledge (Adhiti), comprehension(Bodha)skill(Acharana) and Attitude(pracharana).These teaching methodologies are evolved from the ancient upanishadic way of teaching(Adhyapanavidhi).The new principles of teaching strategies of blooms taxonomy correlate with the ancient way of teaching and the syllabus of Padarthavijnanam has been revamped according to the need of hour.

Padartha Vijnanam is a unique and mandatory subject needed for learning the stream of Ayurveda. It is the combination of science and philosophy. One can say that the science and philosophy are the two sides of the same coin. The search behind “existence of world/self” when progresses outward it travels the path of science and when this search is inwards it becomes philosophy. Thus, Padartha Vijnanam is an essential base of Ayurveda education. When the foundation becomes strong building also becomes strong.

Padartha Vijnanam not only provides the platform to understand Ayurveda better but it also helps the students to appreciate the moral values beneficiating them in developing the personality. As mentioned in graduate attributes this subject helps the student to become eloquent communicator and self-directed learner who constantly endeavors to advance knowledge and skills to improve healthcare and social well-being.

This syllabus reform of Padartha Vijnanam has taken care of adopting the modern teaching-learning methodology well-merging with the ancient one. This will definitely enhance the understanding of the subject in a better way.

Introduction of practicals is the zest for the subject. As we all know- “I hear, and I forget. I see and I remember. I do, and I understand”. The teaching learning process must be joyful along with lecture methods like group discussions, debate, roleplay and PBL. They are also mentioned and the flexibility is kept. Here in this syllabus, the activity book is introduced to induce activity-based learning. This will definitely create the interest in the subject. There are some self-learning activities also which will induce the thirst for the knowledge in the student. This will help the student to understand theoretical concepts in a lucid way and also provides hands on experience

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Course Code and Name of Course

	Course code	Name of Course
	AyUG-PV	Padartha Vijnanam (Fundamental Principles of Ayurveda and Quantum Mechanics)

AyUG-PV Course

Table 1- Course learning outcomes and matched PO.

CO	Course learning Outcomes (CO) AyUG-PV	Course learning Outcome matched with program learning outcomes.
	At the end of the course AyUG-PV, the student should be able to-	
CO 1	Illustrate the scope and utility of Ayurveda	PO1
CO 2	Explain Philosophical foundation of Ayurveda, Principles (Siddhantha) of Darshana along with their similarities and relevance in Ayurveda and contemporary sciences.	PO1, PO2, PO6
CO 3	Analyse and interpret Padartha (Prameya) in Darshana and Ayurveda. Recognize their applications in Ayurveda.	PO1, PO2, PO9
CO 4	Distinguish, analyse and apply concept of Pramana shastra (Epistemology) in Darshana and Ayurveda. Demonstrate their applications in Ayurveda.	PO1, PO2, PO9
CO 5	Analyse and apply concept of Karya Karana Bhava in Ayurveda.	PO1, PO2, PO9

Table 2 : Contents of Course AyUG-PV

Sr No	A2 List of Topics AyUG-PV	B2 Term	C2 Marks	D2 Lecture hours	E2 Non-Lecture hours
1	Paper I Ayurveda Nirupana 1.1 Lakshana of Ayu, composition of Ayu. 1.2 Lakshana of Ayurveda. Swaroopaa and Prayojana of Ayurveda 1.3 Lakshana and classification of Siddhanta. 1.4 Introduction to Basic Principles of Ayurveda and their significance.	I		5	6
2	Padartha and Darshana Nirupana 2.1 Padartha Lakshana, Enumeration and classification of Padartha, Bhava and Abhava Padartha, Padartha according to Acharya Charaka (Karana-Padartha). 2.2 Etymological derivation of the word “Darshana”. Classification and general introduction to 9 Schools of Indian Philosophy with an emphasis on: Nyaya, Vaisheshika, Sankhya ,Yoga, Meemamsa and Vedanta darshana. 2.3 Ayurveda as unique and independent school of thought (philosophical individuality of Ayurveda). 2.4 Principles and examples in contemporary sciences which will enhance understanding concept of Padartha. 2.5 Relevance of Study of Darshana and Padartha Vignana in Ayurveda	I	25	10	14
3.	Dravya vijnaneeyam 3.1 Dravya: Lakshana, Classification and Enumeration 3.2 Panchabhuta: Various theories regarding the creation (theories of Taittiriyaopanishad, Nyaya-Vaisheshika, Sankhya-Yoga, Sankaracharya, Charaka and Sushruta), Lakshana and qualities of each Mahabhoota. 3.3 Kala: Etymological derivation, Lakshana , division / units and significance. 3.4 Dik: Lakshana ,division and significance. 3.5 Atma: Lakshana, classification, seat, Gunas, Linga according to Charaka, the method / process of knowledge formation (atmanah jnasya pravrittih). 3.6 Purusha: According to Ayurveda - Ativahikapurusha/ Sukshmarsharira/ Rashipurusha/ Chikitsapurusha/ Karmapurusha/ Shaddhatvatmakapurusha. 3.7 Manas: Lakshana, Synonyms, Qualities, Objects, Functions, dual nature of mind (ubhayaatmakatvam), as a substratum of diseases,Influence of Panchabhoutika aahara and aushadha (penta-elemental diet)on manas. 3.8 Role of Panchamahabhuta and Triguna in Dehaprakriti and Manasaprakriti respectively. 3.9 Tamas as the tenth Dravya. 3.10 Practical study/Application and Importance of each Kaarana dravya in Ayurveda. 3.11 Principles and examples in contemporary sciences	II	48	14	20

	which will enhance understanding concept of Kaarana dravya.				
4.	Guna vijnaneeyam 4.1 Etymological Derivation, Classification and Enumeration according to various Darshana and Charaka, 4.2 Lakshana and Classification of Sartha Guna, Gurvadiguna, Paradiguna, Adhyatmaguna (41 Guna) 4.3 Gunapradhanyata (Importance of Guna) 4.4 Practical / clinical application of each Guna in Ayurveda 4.5 Principles and examples in contemporary sciences which will enhance understanding concept of Guna.	II		4	6
5.	Karma vijnaneeyam 5.1 – Introduction of concept of Karma According to Darshanaand Ayurveda – Classification of Karma 5.3 - Practical application of karma 5.4 - Principles and examples in contemporary sciences which will enhance understanding concept	II		2	4
6.	Samanya vijnaneeyam 6.1 – Introduction of concept of Saamaanya According to Darshana and Ayurveda. – Classification of Saamaanya 6.3 - Practical application of saamaanya 6.4 - Principle and examples in contemporary sciences which will enhance understanding theconcept of Saamanya.	III		3	6
7.	Vishesha vijnaneeyam 7.1 – Introduction of concept of Vishesha according to Darshana and Ayurveda 7.2 - Classification of Vishesha 7.3 - Practical Application of vishesha 7.4- Principles and examples in contemporary sciences which will enhance understanding the concept of Vishesha	III	27	3	6
8.	Samavaya vijnaneeyam 8.1 – Introduction of concept of Samavaaya According toDarshana and Ayurveda. 8.2 – Practical application of Samavaaya 8.3- Principles and examples in contemporary sciences which will enhanceunderstanding theconcept of Samavaya	III		2	4
9	Abhava vijnaneeyam 9.1 – Introduction of concept of Abhaava According to Darshana and Ayurveda. 9.2 – Classification of Abhaava. 9.3 – Practical application of Abhaava 9.4- Principles and examples in contemporary sciences which will enhance understanding the concept of Abhava.	III		2	4

Paper II					
	A2 List of Topics – AyUG-PV	B2 Term	C2 Marks	D2 Lecture hours	E2 Non-Lecture hours
1	<p>Pariksha</p> <p>1.1. Definition, Significance, Necessity and Use of Pariksha.</p> <p>1.2. Definition of Prama, Aprama, Prameya, Pramata, Pramana.</p> <p>1.3. Significance and importance of Pramana, Enumeration of Pramana according to different schools of Philosophy.</p> <p>1.4. Four types of methods for examination in Ayurveda (Chaturvidha-Parikshavidhi), Pramana in Ayurveda.</p> <p>1.5. Subsumption of different Pramanas under three Pariksha.</p> <p>1.6. Practical application of methods of examination (Parikshavidhi) in Nidan and Chikitsa.</p>	I	26	6	12
2	<p>2. Aptopadesha Pariksha/Pramana</p> <p>2.1. Lakshana of Aptopadesha, Lakshana of Apta.</p> <p>2.2. Lakshana of Shabda, and its types.</p> <p>2.3. Shabdavritti-Abhidha, Lakshana, Vyanjana and Tatparyakhya. Shaktigraha hetu.</p> <p>2.4. Vaakya: Characteristics, Vaakyarthajnanahetu- Aakanksha, Yogyata, Sannidhi.</p> <p>2.5. Importance of Aptopadesha in maintaining Health, Prevention of Diseases, Diagnostics, Therapeutics and Research.</p>	I		6	10
3.	<p>3. Pratyaksha Pariksha/Pramana</p> <p>3.1. Lakshana of Pratyaksha, types of Pratyaksha- Nirvikalpaka- Savikalpaka with description, description of Laukika and Alaukika types and their further classification.</p> <p>3.2. Indriya-prapyakaritvam, six types of Sannikarsha.</p> <p>3.3. Indriyanam lakshanam, classification and enumeration of Indriya. Description of Panchapanchaka, Penta-elemental nature of Indriya (<i>Panchabhautikatwa</i> of Indriya) and similarity in sources (<i>Tulyayonitva</i>) of Indriya.</p> <p>3.4. Trayodasha Karana, dominance of Antahkarana.</p> <p>3.5. Hindrances in direct perception (<i>pratyaksha-anupalabdihikaarana</i>), enhancement of direct perception (Pratyaksha) by various</p>	II	42	8	14

	instruments/ equipments, necessity of other Pramanas in addition to Pratyaksha. 3.6. Practical study/ application of Pratyaksha in Sharir, Nidan (Diagnosis), Chikitsa (Treatment) and Anusandhan (Research).				
4.	4. Anumanapariksha/Pramana 4.1. Lakshana of Anumana. Introduction of Anumiti, Paramarsha, Vyapti, Hetu, Sadhya, Paksha, Drishtanta. Types of Anumana mentioned by Charaka and Nyayadarshana. 4.2. Characteristics and types of Vyapti. 4.3. Lakshana and types of Hetu, Description of Ahetu and Hetwabhasa. 4.4. Characteristics and significance of Tarka (logic). 4.5. Practical study/ application of Anumanapramana in Sharir, Nidan, Chikitsa and Anusandhan.	II		10	15
5.	5. Yuktipariksha/Pramana 5.1. Lakshana and description. 5.2. Importance in Ayurveda. 5.3. Practical study and utility in diagnostics, therapeutics and research.	III		2	2
6.	6. UpamanaPramana 6.1. Lakshana. 6.2. Application in Sharir, diagnostics, therapeutics and research.	III		2	4
7.	Karya- Karana Siddhanta 7.1. Lakshana of Karya and Kaarana. Types of Kaarana. 7.2. Significance of Karya and Kaarana in Ayurveda. 7.3. Different opinions regarding the manifestation of Karya from Kaarana: Satkaryavada, Parinamavada, Vivartavada, Asatkaryavada, Arambhavada, Paramanuvada, Kshanabhanguravada, Pilupaka, Pitharpaka, Anekantavada, Swabhavavada, Swabhavoparamavada. Importance/ Utility of each of these in Ayurveda 7.4 Study of cause effect relationship, causality, causation in Contemporary sciences.	III	32	11	13

Table 3: Learning objectives (Theory) of Course AyUG-PV

Paper I									
A3 Course outcome	B3 Learning Objective (At the end of the session, the students should be able to)	C3 Domain/sub	D3 Must to know/ desirable to know/Nice to know	E3 Level Does/ Shows how/ Knows how/ Know	F3 T-L method	G3 Assessment	H3 Format ive /summ ative	I3 Te rm	J3 Integ ration
Topic 1- Ayurveda Nirupana Time (Lecture: - _5 hours Non lecture 6 hours)									
CO1	Describe the Nirukti (etymology) and Definition of Ayu	Cognitive/ Recall	Must Know	Knows	Lecture Group discussion	Written and Viva	F and S	I	
CO1	Describe the components of Ayu	Cognitive/ Recall	Must Know	Knows	Lecture Group Discussion Enquiry Based learning	Written and Viva	F and S	I	
CO1	Explain Synonyms of Ayu with their meaning and importance	Cognitive Recall	Must Know	Knows	Lecture Group Discussion	Written and Viva	F and S	I	
CO1	Distinguish between 4 types Ayu namely Sukhayu, Dukhayu, Hitayu, Ahitayu	Cognitive Comprehension	Must Know	Knows	Lecture Group Discussion/ Problem Based Learning	Written and Viva, Quiz	F and S	I	
CO1	Realises that the balance between hitayu	Affective	Must know	Knows	Group Discussion/	viva	F	I	

	and Sukhayu will offer better living				Debate				
CO1	Describe Lakshana of Ayurveda and Enlist Synonyms of Ayurveda	Cognitive Recall	Must Know	Knows	Lecture Group Discussion	Written and Viva	F and S	I	
CO1	Explain different Swarupa of Ayurveda and Discuss Ayurveda Prayojana	Cognitive Comprehension	Must Know	Knows	Lecture Group Discussion/Problem Based Learning	Written and Viva Open Book Test	F and S	I	
CO1	Explain Trisutra of Ayurveda and discuss Nityatva (eternity) of Ayurveda	Cognitive Comprehension	Must Know	Knows	Lecture Group Discussion/ Debate	Written and Viva	F and S	I	
CO1, CO 2	Define Siddhanta	Cognitive Recall	Must Know	Knows	Lecture Presentation Discussion	Written and Viva	F and S	I	
CO1, CO 2	Distinguish the types of Siddhanta	Cognitive Comprehension	Must Know	Knows	Lecture Group Discussion/ Enquiry Based Learning	Written and Viva, Puzzle	F and S	I	
CO1, CO 2	Elaborate the Basic Principles of Ayurveda like Lokapurusha Samya Siddhanta Panchamahabhoota Siddhanta Tridosha Siddhanta Samanya Vishesha Siddhanta Karya Karana Siddhant	Cognitive Comprehension	Must Know	Knows	Lecture/ Group Discussion /Problem Based Learning/ Flipped Classroom	Written and Viva, quiz PBA CBA	F and S	I	

CO1, CO 2	Justify the Application of Basic Principles in Ayurveda	Affective	Must know	Knows	Lecture Demonstration/ Group Discussion	Written and Viva	F and S	I	
CO1, CO 2	Recite the concern verses from Tarkasangraha and Charak Samhita	Cognitive Recall	Desirable to know	Knows	Audio clips, classroom recitation	Viva, recitation competition	F and S	I	
Topic 2- Padartha and Darshana Nirupana Time (Lecture:- _10_ hours Non lecture _14_ hours)									
CO1, CO 2	Classify padartha, differentiate bhava, abhava padartha and Appreciate Shat karana of Acharya Charaka.	Cognitive Recall	Must Know	Knows	Lecture/ Discussions PBL	Written and Viva, puzzle	F & S	I	
CO1, CO 2	Discuss similarity and dissimilarity of padartha	Cognitive Comprehension	Desirable to Know	Knows	Lecture/ Discussions/ Activity based learning	Written and Viva	F & S	I	
CO2	Explain nirukti and vyakhya (definition) of darshana	Cognitive Recall	Must Know	Knows	Lecture	Written and Viva	F & S	I	
CO2	Describe Origin of darshana and Explain Importance of darshana (prayojana)	Cognitive Comprehension	Must know	Knows how	Lecture / Group Discussion	Written and Viva, Quiz	F & S	I	
CO1, CO 2	Analyse terms viz - philosophy, metaphysics, aesthetics, epistemology, psychology in relation with darshana	Cognitive Comprehension	Nice to know	Knows	Lecture / Group Discussion/ Activity Based learning	Written and Viva	F & S	I	
CO2	Classify darshana and differentiate between asthika, nasthika, asthikanasthika	Cognitive Recall	Must Know	Knows	Lecture / Enquiry Based Learning	Written and Viva	F & S	I	

	darshana								
CO1, CO 2	Enumerate darshana relevant for Ayurveda study and mention the pioneers of each darshana	Cognitive Recall	Must Know	Knows	Lecture/ Role play/Group Discussion	Written and Viva, Puzzle	F & S	I	
CO1, CO 2	Outline the reason for study of darshana in Ayurveda and Comprehend Philosophical foundation of Ayurveda	Cognitive Comprehension	Must Know	Knows how	Lecture/ Problem Based Learning/ Group discussion/Tutorial	Written and Viva, Open Book Test	F & S	I	
CO2	Explain meaning of nyaya and synonyms of nyayadarshana	Cognitive Recall	Must Know	Knows	Lecture Group discussion	Written and Viva	F & S	I	
CO2	Enumerate nyayoktha 16 padarthas, 12 prameyas	Cognitive Recall	Desirable to Know	Knows	Lecture /Enquiry Based Learning	Written and Viva	F & S	I	
CO2	Recall the content of nyaya sutra	Cognitive Recall	Nice to know	Knows	Lecture	Written and Viva	F & S	I	
CO2	Outline salient features of nyayadarshana viz- chaturvida pramana, pitharapaka, arambhavada.	Cognitive comprehension	Must Know	Knows	Lecture/ Group discussion / Activity Based Learning	Written and Viva , Quiz	F & S	I	
CO2	Explain meanings of vaisheshika and synonyms	Cognitive Recall	Must Know	Knows	Lecture/	Written and Viva	F & S	I	
CO2	Recall the content of vaisheshika sutra	Cognitive Recall	Nice to Know	Knows	Lecture	Written and Viva	F & S	I	

CO2	Identify salient features of vaisheshika darshana viz-shatpadartha, paramanuvada, peelupakavada	Cognitive comprehension	Must Know	Knows	Lecture group discussion/Activity based learning	Written and Viva, quiz, puzzle	F & S	I	
CO2	Explain the meaning of sankhya	Cognitive Recall	Must Know	Knows	Lecture	Written and Viva		I	
CO2	Enumerate, define and categorise 25 tatvas	Cognitive Recall	Must Know	Knows	Lecture discussion	Written and Viva puzzle	F & S	I	
CO2	Recall the trividhadukha, triguna, satkaryavada	Cognitive Recall	Must Know	Knows	Lecture/ Inquiry based learning	Written and Viva	F & S	I	
CO2	Define yoga and explain ashtangayoga	Cognitive comprehension	Must Know	Knows	Lecture Group discussion/demonstration	Written and Viva, quiz	F & S	I	
CO2	Recall content of yoga sutra	Cognitive Recall	Nice to know	Knows	Lecture	Written and Viva	F & S	I	
CO2	Enumerate chittavrutti, panchaklesha, ashtasiddhi	Cognitive Recall	Must Know	Knows	Lecture Debate /Group Discussion	Written and Viva, quiz	F & S	I	
CO2	Recall different type of yoga	Cognitive Recall	Nice to know	Knows	Lecture Self-Directed learning/Activity based learning	Written and Viva, open book test	F & S	I	
CO1, CO 2	Outline the salient features of meemamsa darshana and Vedanta darshana Viz. karma siddhanta, atma, maya, vivartavada,	Cognitive comprehension	Must Know	Knows	Lecture Group Discussion/ Debate	Written and Viva, Quiz	F & S	I	

CO1, CO 2	Explain similarity between Nyaya, vaisheshika, Sankhya, yoga, meemamsa and Vedanta darshana with Ayurveda	Cognitive comprehension	Must Know	Knows how	Lecture discussion PBL/ Flip classroom	Written and Viva	F & S	I	
CO1, CO 2	Explain Charvaka, Jaina and Bouddha darshana and their influence in Ayurveda	Cognitive comprehension	Must Know	Knows	Lecture Group Discussion	Written and Viva	F & S	I	
CO1, CO 2	Demonstrate Ayurveda as unique and independent school of thought (philosophical individuality of Ayurveda).	Cognitive Comprehension Affective	Must Know	Knows how/	Lecture/ Group Discussions PBL	Written and Viva	F & S	I	
CO 1 CO 2	Compare the the Srishtiutpatti krama by different darshanas with contemporary theories like- Big Bang, The multiverse, brane world, the hylographic universe, Simulation theory etc	Cognitive Comprehension	Nice to Know	Knows	Lecture with Videos, Group discussion/ self learning	Puzzle, viva	F	I	
CO 1	Respect ancient philosophy and Ayurveda	Affective	Must know	Know	Discussion	Discussion Debate	F	I	
CO1, CO 2	Enumerate padartha according to different schools of thought	Cognitive Recall	Desirable to Know	Knows	Lecture Group Discussion	Written and Viva, Puzzle	F & S	I	
CO1, CO 2	Find principles and examples in contemporary sciences	Cognitive/ Comprehension	Nice to know	knows	Lecture/ Discussions/ Self-learning,	-	F	I	

	which will enhance understanding concept of Padartha. For ex-matter and energy.								
CO1, CO 2	Analyse role of padartha in darshana and in Ayurveda and Demonstrate the role of Padarthavijnana in Ayurveda	Cognitive / Comprehension	Must Know	Knows how	Lecture/ Seminars /PBL	Written and Viva, Open Book Test	F & S	I	
CO2	Recite concern verses	Cognitive Recall	Desirable to know	knows	Edutainment Audio clips, classroom recitation	Viva, recitation competition	F&S	I	
Topic-3 Dravya vijnaneeyam Time (Lecture:- __14__ hours Non lecture __20__ hours)									
CO3	Explain Nirukti and Paribhasha (definition) of Dravya	Cognitive Recall	Must Know	Knows	Lecture	Written and Viva	F and S	II	
CO3	Classify Dravya and Differentiate between Karana and Karya dravya	Cognitive Recall	Must Know	Knows	Lecture Group Discussion/ Enquiry Based Learning	Written and Viva, Puzzle	F and S	II	
CO3	Enumerate Darvyas as per different schools of thoughts	Cognitive Recall	Must Know	Knows	Lecture Group Discussion	Written and Viva, puzzle	F and S	II	
CO3, CO1	Value Practical application of study of Dravya in Ayurveda	Affective	Desirable to know	Knows how	Lecture Group Discussion	Written and Viva	F and S	II	
CO3	Explain the various theories (theories of Taittiriyanopanishad, Nyaya-Vaisheshika,	Cognitive/ Comprehension	Must Know	Knows	Lecture Group Discussion /Activity Based	Written and Viva, Quiz	F and S	II	

	Sankhya-Yoga, Sankaracharya, Charaka and Sushruta) regarding creation of Panchamahabhoota				Learning				
CO3	Describe Prithvi Mahabhoota Explain qualities of Prithvi Mahabhoota	Cognitive / Comprehension	Must Know	Knows	Lecture Seminar/ Group Discussion	Written and Viva	F and S	II	
CO3	Describe Aap Mahabhoota Explain qualities of Ap Mahabhoota	Cognitive, Comprehension	Must Know	Knows	Lecture Seminar/ Group Discussion	Written and Viva	F and S	II	
CO3	Describe Teja Mahabhoota Explain qualities of Teja Mahabhoota	Cognitive, Comprehension	Must Know	Knows	Lecture Seminar/ Group Discussion	Written and Viva	F and S	II	
CO3	Describe Vayu Mahabhoota Explain qualities of Vayu Mahabhoota	Cognitive, comprehension	Must Know	Knows	Lecture Seminar/ Group Discussion	Written and Viva	F and S	II	
CO3	Describe Aakash Mahabhoota. Explain qualities of Aakash Mahabhoota	Cognitive, Comprehension	Must Know	Knows	Lecture Seminar/ Group Discussion	Written and Viva	F and S	II	
CO3, CO1	Value Practical application of Panchamahabhoota in Ayurveda	Affective	Must know	Knows	Lecture Group Discussion, Demonstration	Written and Viva, Open Book Test	F and S	II	

CO2	Compare elementary particles/subatomic particles with Tanmatra/triguna.	Cognitive/ Recall	NK	Know	Video clips, discussions SDL	Quiz	F	II	
CO3, CO1	Define the term <i>Kala</i> from various <i>darshanas</i> and <i>Ayurveda</i> .	Cognitive/ Recall	Must know	Knows	Lecture	Written and Viva	F & S	II	
CO3	Explain classification/types of <i>Kala</i>	Cognitive/ Recall	Must know	Knows	Lecture	Written and Viva	F & S	II	
CO3, CO1	Find illustrations of <i>kala</i> explained in <i>Ashtang Hridaya</i> .	Cognitive/ Comprehension	Must know	Knows	Lecture /Activity Based Learning	Written and Viva	F & S	II	
CO3, CO2 CO1	Give examples of importance of <i>Kala</i> in <i>Ayurveda</i> and time as per contemporary sciences	Cognitive/ Recall	Must know	Knows how	Problem Based Learning/ Group Discussion	Written and Viva, Quiz	F & S	II	
CO3	Define <i>the term Dik</i> . Explain classification/ division of <i>Dik</i> .	Cognitive/ Recall	Must know	Knows	Lecture /Activity Based Learning	Written and Viva, puzzle	F & S	II	
CO3, CO1	Illustrate significance of <i>Dishas</i> in <i>Ayurveda</i> with examples.	Cognitive/ Comprehension	Must know	Knows how	Lecture /Seminar	Written and Viva	F & S	II	
CO3	Find illustrations of <i>Dik</i> explained in <i>Ashtangahridaya</i> .	Cognitive/ Comprehension	Must know	Knows how	Group Discussion	Written and Viva, Open book test	F & S	II	
CO3	Define the term <i>Atma</i> ,	Cognitive/ Recall	Must know	Knows	Lecture	Written and Viva	F & S	II	
CO3	Explain <i>atma</i> at different levels, <i>seat</i> , <i>Gunas</i> of <i>Atma</i> ,	Cognitive/ Recall	Must know	Knows	Lecture	Written and Viva	F & S	II	

CO1 CO3	Explain Atma Linga according to Charaka Samhita.	Cognitive/ comprehension	Must know	Knows	Lecture / Flipped Classroom	Written and Viva	F & S	II	
CO3	Describe the method / process of knowledge formation (<i>atmanah jnasya pravrittih</i>).	Cognitive/ Comprehension	Must know	Knows how	Lecture/ Demonstration/	Written and Viva	F & S	II	
CO3	Describe Purusha as mentioned in Ayurveda	Cognitive/ Recall	Must know	Knows	Lecture	Written and Viva	F & S	II	
CO3	Differentiate Ativahikapurusha/ Sukshmasharira/ Rashipurusha/ Chikitsapurusha/ Karmapurusha/ Shaddhatvatmaka-purusha.	Cognitive/ Comprehension	Must know	Knows how	Lecture / Group discussions	Written and Viva	F & S	II	
CO3	Recognize and state significance of Atmavijnanam	Affective	Desirable to know	Knows	Group Discussions/ Problem Based Learning	viva	F	II	
CO3	Define term Manas, Enlist synonyms, Explain it's Guna. Karma, Vishay. Explain dual nature of mind. (<i>ubhayaatmakatvam</i>),	Cognitive/ Recall and Comprehension	Must know	Knows	Lecture / Activity Based Learning/Debate	Written and Viva. Puzzle	F & S	II	
CO3	Explain influence of Panchabhoutika aahara and aushadha (penta-elemental diet) on manas	Cognitive/ Recall	Must know	Knows how	Lecture/ discussions/ PBL	Written and Viva. Open Book Test	F & S	II	

CO3	Recognizes the utility of Knowledge of Mana	Affective	Must Know	Knows	Case Based learning	viva	F & S	II	
CO3, CO1	Explain Concept of mind in other sciences.	Cognitive/ Recall	Nice to know	Knows	Discussions/ Videos	Written and Viva	F	II	
CO1	Explain Role of Panchamahabhuta and Triguna in Dehaprakriti and Manasaprakriti respectively.	Cognitive/ Comprehension	Must know	Knows how	Lecture / discussions/ C B L	Written and Viva	F & S	II	
CO3	Discuss the role of Tamas as the tenth Dravya	Cognitive/Comprehension	Desirable to know	Know	Lecture Edutainment Role Play	Written and Viva	F & S	II	
CO3	Realize Practical application of study of dravya in Ayurveda	Affective	Desirable to know	Know	Group Discussions/ Case Base Learning/ Demonstration.	Written and Viva, quiz	F & S	II	
CO3	Recite Dravya Granth of Tarka Sangrah & defn from Charak	Cognitive Recall	Desirable to know	knows	Audio clips/ classroom recitation	Viva, Recitation Competetion	F&S		
CO3. CO2	Discuss principles and examples in contemporary sciences which will enhance understanding the concept of Karana dravya. For ex- Quantum Physics	Cognitive/Comprehension	Nice to know	Know	Lecture/ Discussions/ Self-learning activity	Open book testh	F	II	
Topic -4 Guna vijñaneeyam Time (Lecture:-4 hours Non lecture 6 hours)									
CO3	Define Guna and classify Guna according to various Darshanas and Charaka Samhita	Cognitive Recall	Must know	knows how	Lecture /Demonstration	Written and Viva	F&S	II	

CO3	Explain the Lakshana of indriyartha Gunas with examples.	Cognitive Comprehension	Must know	Knows how	Lecture / Group Discussion	Written and Viva	F&S	II	
CO3	Discuss the Lakshana of Gurvadi Guna with examples.	Cognitive Comprehension	Must know	Knows how	Lecture /Seminar/ Group Discussion	Written and Viva, puzzle	F&S	II	
CO3	Explain the Lakshana of Paradi Guna with examples.	Cognitive Comprehension	Must know	Knows how	Lecture /Seminar/ Group Discussion	Written and Viva, Puzzle	F&S	II	
CO3	Describe the Lakshana of Adhyatma Guna with examples.	Cognitive Comprehension	Must know	Knows how	Lecture /Seminar/ Group Discussion	Written And Viva	F&S	II	
CO3	Appreciate the importance of Guna (Gunapradhanyata)	Affective	Must know	Knows	Discussion	Written Discussion viva	F&S	II	
CO3	Describe the practical application of Indriyartha Gunas in diagnosis of disease and Treatment	Cognitive Comprehension	Must know	Knows how	Lecture / Demonstration/ Case based learning	Written And Viva	F&S	II	
CO3	Describe the practical application of Gurvadi Guna in diagnosis of disease and Treatment	Cognitive Comprehension	Must know	Knows how	Lecture / Demonstration/ Case based learning	Written And Viva	F&S	II	
CO3	Describe the practical application of Paraadi Gunas.	Cognitive Comprehension	Must know	Knows how	Lecture / Demonstration/ Activity based learning	Written And Viva	F&S	II	

CO3	Describe the practical application of Adhyatma Guna .	Cognitive Comprehension	Must know	knows how	Lecture / Demonstration/ Problem Based Learning	Written And Viva	F&S	II	
CO3	Recite the concern verses from TarkaSangrah and Charak Samhita	Cognitive Recall	Desirable to know	knows	Audio clip/ classroom recitation	viva	F&S Recitation competition	II	
CO1 CO2	Discuss Principles and examples in contemporary sciences which will enhance understanding the concept of Guna.	Cognitive Comprehension	Nice to know	Knows	Lecture/ Discussions/ Self-learning activity	-	F	II	
Topic - 5. Karma vijñaneeyam Time (Lecture:- __2__ hours Non lecture _4__ hours)									
CO3	Define <i>Karma</i> acco. to various <i>Darshana</i> and <i>Ayurveda</i> .	Cognitive Recall	Must know	Knows	Lecture	Written And Viva	F&S	II	
CO3	Compare the <i>Karma Lakshana</i> (characteristics) from <i>Charaka Samhita</i> and <i>Darshana</i>	Cognitive Comprehension	Must know	Knows	Lecture/ Group discussion/ Flipped Classroom	Written And Viva	F&S	II	
CO3	Explain the types of <i>Karma</i>	Cognitive Comprehension	Must know	Knows	Lecture and discussion, demonstration	Written And Viva	F&S	II	
CO3	Describe the process of production and destruction of <i>Laukika Karma</i> with one	Cognitive Comprehension	Desirable to know	Knows how	Lecture and demonstration	Written And Viva	F&S	II	

	example.								
CO3	Describe the <i>Adhyaatmika</i> karma and its causal relationship with health and disease.	Cognitive Comprehension	Must know	Knows how	Lecture and discussion	Written And Viva	F&S	II	
CO3	Enlist the other types of processes or pharmacological actions which came under the title of <i>Karma</i> in <i>Ayurveda</i> . Viz: <i>Panchakarma, Shastrakarma, Lekhana, Bruhana</i> etc.	Cognitive Recall	Must know	Knows how	Lecture and discussion/ Self Directed Learning	Written And Viva	S	II	
CO3	Recite the concern verses from TarkaSangrah and Charak Samhita	Cognitive Recall	Desirable to know	knows	Audio clip/ classroom recitation/ Edutainment	viva	F&S Recitation competition	II	
CO1 CO2	Discuss principles and examples in contemporary sciences which will enhance understanding the concept of Karma.	Cognitive Recall	Nice to know	Knows	Lecture/ Discussions/ Self-learning	-	F	II	
Topic - 6 . Samanya vijnaneeyam									
Time (Lecture:- 3 hours Non lecture 6 hours)									
CO3	Explain the Samanya(According to <i>Ayurveda & Darshana</i>)	Cognitive Comprehension	Must know	Knows	Lecture	Written And Viva	F&S	III	
CO3	Distinguish the <i>Samanya</i> concept of <i>Ayurveda</i> from	Cognitive Comprehension	Must know	Knows	Lecture and discussion	Written And Viva	F&S	III	

	<i>Darshana.</i>								
CO3	Describe the <i>Anuvritti Buddhi</i>	Cognitive Recall	Desirable to know	knows	Lecture and discussion	Written	F & S	III	
CO3	Explain the types of <i>Samanya</i> (Acc. To <i>Ayurveda</i> and <i>Darshana</i>)	Cognitive Recall	Must know	Knows	Lecture and discussion/ Flipped Classroom	Written And Viva	F & S	III	
CO3	Explain the importance of <i>samanya</i> in diagnosis and treatment	Cognitive Comprehension	Must know	Knows	Lecture and discussion/Case Based Learning	Written And Viva ,Quiz	S	III	
CO3	Identify the examples of <i>Dravya-guna-karma Samanya</i> with each <i>DOSHA-DHATU-MALA</i>	Cognitive Comprehension	Must know	Knows how	Lecture and Demonstration/ Group Discussion	Written And Viva , Open Book Test	S	III	
CO3	Recite the concern verses from <i>TarkaSangrah</i> and <i>Charak Samhita</i>	Cognitive Recall	Desirable to know	knows	Audio clip/ classroom recitation	viva	F&S Recitation competition		
CO1	Discuss principle and examples in contemporary sciences which will enhance understanding the concept of <i>Samanya</i> . For ex-system biology	Cognitive Comprehension	Nice to know	knows	Self -Directed learning	-	F	III	
Topic - 7 . Vishesh vijñaneeyam									
Time (Lecture:- 3 hours Non lecture 6 hours)									
CO3	Explain <i>Vishesh</i> According to <i>Ayurveda</i> & <i>Darshana</i>	Cognitive Comprehension	Must know	Knows	Lecture and Group Discussion	Written And Viva	F&S	III	

CO3	Distinguish <i>Vishesha</i> concept of <i>Ayurveda</i> from <i>Darshana</i> .	Cognitive Comprehension	Must know	Knows	Lecture and Group Discussion	Written and Viva	F&S	III	
CO3	Describe the <i>Vyavrutti Buddhi</i>	Cognitive Recall	Desirable to know	knows	Lecture and discussion	Written	F & S	III	
CO3	Explain <i>Vishesha</i> in the context of <i>Mahabhoota Paramanu</i>	Cognitive Recall	Nice to know	knows	Lecture	Written	F & S	III	
CO3	Discuss the <i>Viruddha Vishesha</i> and <i>Aviruddha Vishesha</i> and other types of <i>Vishesha</i>	Cognitive Comprehension	Must know	Knows how	Lecture and discussion, demonstration	Written And Viva	F&S	III	
CO3	Explain the statement “ <i>Pravruttirubhayasyatu</i> ”	Cognitive Comprehension	Must know	Knows how	Lecture, Problem Based Learning	Written Viva	F&S	III	
CO3	Provide different classifications of <i>vishesha</i> and their utility in Diagnosis and Treatment.	Cognitive recall	Must know	Knows how	Lecture/ Activity Based Learning	Written, Viva, Open Book Test	F&S	III	
CO3	Identify the examples of <i>Dravya-guna-karma Vishesha</i> with each <i>DOSHA-DHATU-MALA</i>	Cognitive Comprehension	Must know	Knows how	Lecture and demonstration/ Game Based Learning	Written And Viva Quiz	S	III	
CO1, CO2	Describe principles and examples in contemporary sciences which will enhance understanding the concept of <i>Vishesha</i> For ex- System Biology	Cognitive Comprehension	Nice to know	knows	Lecture/ Discussions/ Self-learning activity	viva-	F	III	

CO3	Recite the concern verses from TarkaSangrah and Charak Samhita	Cognitive Recall	Desirable to know	knows	Audio clip/ classroom recitation	viva	F&S Recitation on competition	III	
Topic - 8. Samavay vijnaneeyam									
Time (Lecture:- 2 hours Non lecture 4 hours)									
CO3	Explain Samavaya (Acc. To <i>Ayurveda</i> and <i>Darshana</i>)	Cognitive Recall	Must know	Knows	Lecture	Written And Viva	F&S	III	
CO3	Describe the eternal relation between ayutasiddhavritti	Cognitive Comprehension	Must know	Knows how	Lecture and demonstration	Written And Viva	F&S	III	
CO1 CO2	Discuss principles and examples in contemporary sciences which will enhance understanding the concept of Samavaya	Cognitive Recall	Nice to know	knows	Lecture/ Discussions/ Self-learning activity	-	F	III	
CO3	Recite the concern verses from TarkaSangrah and Charak Samhita	Cognitive Recall	Desirable to know	knows	Audio clip/ classroom recitation	Viva, Recitation competition	F&S		
Topic - 9. Abhav vijnaneeyam									
Time (Lecture:- 2 hours Non lecture 4 hours)									
CO3	Define <i>Abhava</i>	Cognitive Recall	Must know	Knows	Lecture and discussion	Written And Viva	F&S	III	
CO3	Discuss the supportive and contradictory views for the acceptance of <i>Abhava</i> as a <i>Padartha</i>	Cognitive comprehension	Must know	Knows How	Lecture Group Discussion/ debate	Written And Viva	F&S	III	
CO3	Explain the view of <i>Ayurveda</i> about <i>Abhava</i>	Cognitive Recall	Must know	Knows	Lecture demonstration	Written And Viva	F&S	III	

CO3	Explain the four types of <i>Abhava</i>	Cognitive Recall	Must know	Knows	Lecture ,Activity Based Learning	Written And Viva , Puzzle	F&S	III	
CO3	Demonstrate the utility of the knowledge of <i>Abhava</i> in Ayurveda	Cognitive Comprehension	Must know	Knows how	Lecture, Group discussions Problem Based Learning	Written And Viva	F&S	III	
CO1 CO2	Discuss principles and examples in contemporary sciences which will enhance understanding the concept of <i>Abhava</i>	Cognitive Recall	Nice to know	knows	Lecture/ Discussions/ Self-learning activity	-	F	III	
CO3	Recite the concern verses from TarkaSangrah and Charak Samhita	Cognitive Recall	Desirable to know	knows	Audio clip/ classroom recitation	viva	F&S Recitation competition		
Paper II									
Topic 1- (Pariksha) Time (Lecture:- 6 hours Non lecture 12 hours)									
CO4	Describe Pariksha	Cognitive/ Recall	Must know	Knows	Lecture/Group Discussion	Written And Viva	F&S	I	
CO4	Explain the necessity & significance of pariksha	Cognitive Comprehension	Must know	Knows how	Lecture/Problem Based Learning/Debate	Written And Viva	F&S	I	
CO4	Describe Buddhi and its classification	Cognitive / Recall	Must know	Knows	Lecture/Activity based learning	Written And Viva	F&S	I	
CO4	Describe Prama, Prameya, Pramata, Pramana and differentiate Prama and Aprama	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva, open book test	F&S	I	

CO4	Describe the Significance of Pramana	Cognitive / comprehension	Must know	Knows how	Problem based learning	Written And Viva	F&S	I	
CO4	Enumerate Pramana according to different schools of philosophy.	Cognitive / Recall	Must know	Knows	Lecture	Written And Viva, puzzle	F&S	I	
CO4	Enumerate Pariksha as per Ayurveda.	Cognitive / Recall	Must know	Knows	Lecture/ Enquiry based learning	Written And Viva	F&S	I	
CO4	Describe the Pramana accepted by different schools of Philosophy with one example each.	Cognitive / Recall	Must know	Knows	Lecture/ group discussion	Written And Viva, quiz	F&S	I	
CO4	Describe 4 Pariksha explained by Ayurveda with one example each	Cognitive / Recall	Must know	Knows	Lecture/ activity based learning	Written And Viva, puzzle	F&S	I	
CO4	Justify the inclusion of Pramanas under three Pariksha	Cognitive / Comprehension	Must know	Knows how	Problem based learning and flipped classroom	Written And Viva	F&S	I	
CO4	Describe the practical application of Pariksha Vidhi in Diagnosis and Treatment.	Cognitive / Recall	Must know	Knows	Case based learning/ Group discussion	Written, open book test And Viva	F&S	I	
CO4	Establish that the Pramanas are tool to gain the knowledge	Affective	Must know	knows	Group discussion	Viva	F&S	I	
CO4	Recite the concern Verses from Tarkasangrah & CharakSamhita	Cognitive Recall	Desirable to know	knows	Audio clips, classroom Recitation	Viva, Recitation competetion	F&S	I	

7. Topic 2- (Aptopdesha Pariksha/Pramana) Time (Lecture:- __6_ hours Non lecture _10__hours)I									
CO 4	Describe Apta and Aptopadesh	Cognitive / Recall	Must know	Knows	Lecture	Written And Viva	F&S	I	
CO 4	Describe the significance of Aptopadesha in Chikitsa	Cognitive / Recall	Must know	Knows	Case based learning/ Group discussion	Written And Viva	F&S	I	
CO 4	Define the term Shabda	Cognitive / Recall	Must know	Knows	Lecture	Written And Viva	F&S	I	
CO 4	Describe types of Shabda	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	I	
CO 4	Define the term Shaba artha bodhaka Vrutti	Cognitive / Recall	Must know	Knows	Lecture/ group discussion	Written And Viva	F&S	I	
CO 4	Enumerate Shabaartha bodhaka vrutti	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva, quiz	F&S	I	
CO 4	Define Abhidha Vrutti with illustration	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	I	
CO 4	Define Lakshana Vrutti with examples	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	I	
CO 4	Enumerate the types of Lakshanavrutti and define each of them with example	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	I	
CO 4	Define Vyanjana vrutti with example	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	I	
CO 4	Define Tatparyakhya vrutti with	Cognitive / Recall	Must know	Knows	Lecture/ Activity based	Written And Viva	F&S	I	

	example				learning				
CO 4	Define the term Pada with specification to Shakti and enumerate the types of Pada	Cognitive / Recall	Must know	Knows	enquiry based learning	Written And Viva	F&S	I	
CO 4	Enumerate Shaktigraha hetu	Cognitive / Recall	Must know	Knows	Lecture/ group discussion/ Problem based learning	Written And Viva, puzzle	F&S	I	
CO 4	Describe Shakti graha hetu	Cognitive / Recall	Must know	Knows	Lecture/ Tutorial/ Problem based learning	Written And Viva	F&S	I	
CO 4	Enumerate Vaakyarthajnana hetu	Cognitive / Recall	Must know	Knows	Lecture/ group discussion/ Problem based learning	Written And Viva, quiz	F&S	I	
CO 4	Define Akanksha with example	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning/ Problem based learning	Written And Viva	F&S	I	
CO 4	Define Yogyata with example	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning/ Problem based learning	Written And Viva	F&S	I	
CO 4	Define Sannidhi with example	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning/ Problem based learning	Written And Viva	F&S	I	

CO 4	Describe importance of Aptopadesha in maintaining Health, Prevention of diseases, diagnostics, therapeutics and research.	Cognitive/ Comprehension	Must know	knows	Lecture/ Activity based learning/ Problem based learning	Written And Viva, open book test	F&S	I	
CO4	Recite the concern Verses from Tarkasangrah & CharakSamhita	Cognitive Recall	Desirable to know	knows	Audio clips, classroom Recitation	Viva, Recitation competetion	F&S	I	

Topic 3- Pratyaksha Pariksha/Pramana Time (Lecture:- __8__ hours Non lecture _14__ hours)

CO4	Define Pratyaksha	Cognitive / Recall	Must know	Knows	Lecture/ Tutorial/Activity based learning	Written And Viva	F&S	II	
CO4	Enumerate the types of Pratyaksha	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	II	
CO4	Describe types of Pratyaksha	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning/ Problem based learning	Written And Viva, quiz	F&S	II	
CO4	Describe Indriya Prapyakaritva Mechanism of sensory perception)	Cognitive / comprehension	Must know	Knows	Lecture/ Flip classroom/ Problem based learning	Written And Viva,	F&S	II	
CO4	Define Sannikarsha	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	II	

CO4	Describe the types of Sannikarsha	Cognitive / comprehension	Must know	Knows how	Lecture/ Problem based learning	Written And Viva, puzzle	F&S	II	
CO4	Define Indriya	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	II	
CO4	Enumerate the types of Indriya	Cognitive / Recall	Must know	Knows	Lecture/ role play	Written And Viva	F&S	II	
CO4	Define Jnanendriya	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	II	
CO4	Enlist the functions of Karmendriya	Cognitive / Recall	Must know	Knows	Problem based learning	Written And Viva	F&S	II	
CO4	Describe the function of Manas in relation to Jnanotpatti	Cognitive / Recall	Must know	Knows	Lecture/ Problem based learning	Written And Viva	F&S	II	
CO4	Justify the role of Manas as ubhayendriya in relation with Jnanotpatti and Karma.	Cognitive / Comprehension	Must know	Knows how	Problem based learning / Group discussion/Debate	Written And Viva, open book test	F&S	II	
CO4	Enumerate Panchapanchaka and describe its significance with respect to Pratyaksha Jnana	Cognitive / Recall	Must know	Knows	Lecture/ Problem based learning / Group discussion	Written And Viva, quiz	F&S	II	
CO4	Enumerate and describe briefly the various theories of Darshana and Ayurveda, which highlight the relationship of Indriya	Cognitive / Comprehension	Must know	Knows	Group discussion/ role play/debate	Written And Viva, open book test	F&S	II	

	and Panchamahabhuta.								
CO4	Justify the specificity of Indriya for perceiving specific Artha	Cognitive / Comprehension	Must know	Knows how	Activity based learning/ Problem based learning / Group discussion	Written And Viva	F&S	II	
CO4	Enumerate Trayodasha Karana	Cognitive / Recall	Must know	Knows	Lecture/Tutorial / Activity based learning	Written And Viva, puzzle	F&S	II	
CO4	Enumerate Antahkarana	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	II	
CO4	Enumerate the functions of Antahkarana	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	II	
CO4	Illustrate the role Antahkarana in Jnanotpatti with example to highlight the significance	Cognitive / Comprehension	Must know	Knows how	Lecture/ Problem based learning / Group discussion	Written And Viva, open book test	F&S	II	
CO4	Describe the factors which create hindrance for perception with an illustration (pratyaksha-anupalabdhihaarana)	Cognitive / Comprehension	Must know	Knows	Activity based learning/ Problem based learning / Group discussion	Written And Viva, puzzle	F&S	II	
CO4	Enumerate a few equipments or aids which help in enhancing the direct perception	Cognitive / Recall	Must know	Knows	demonstrations/ Problem based learning / Group discussion	Written And Viva, quiz	F&S	II	
CO4	Justify the necessity of other pramana with textual references and	Cognitive / Application	Must know	Knows how	Lecture/ Activity based learning/	Written And Viva, open book	F&S	II	

	illustrations				Problem based learning / Group discussion	test			
CO4	Describe the practical application of Pratyaksha in Sharir, Nidan, Chikitsa and Anusandhan (research).	Cognitive / comprehension	Must know	Knows	Lecture/ case-based learning / Group discussion	Written And Viva	F&S	II	
CO4	Justify the role Pratyaksha (Observation and interpretation skills for generalization of results) in research	Cognitive / Application	Must know	Knows how	Lecture/ Activity based learning/ Problem based learning / Group discussion	Written And Viva	F&S	II	
CO4	Realizes importance as well as limitation of Pratyaksha	Affective	Must know	Knows	Group discussion	Viva	F&S	II	
CO4	Recite the concern Verses from Tarkasangrah & CharakSamhita	Cognitive Recall	Desirable to know	knows	Audio clips, classroom Recitation	Viva, Recitation competetion	F&S	II	

Topic 4 - Anumana pariksha/Pramana Time (Lecture:- _10_ hours Non lecture _15_ hours)

CO4	Describe Anumana	Cognitive / Recall	Must know	Knows	Lecture	Written And Viva	F&S	II	
CO4	Define the terms with an example (Anumiti, Paramarsha, Vyapti, Hetu, Sadhya, Paksha, Drishtanta)	Cognitive / Recall	Must know	Knows	Lecture/ enquiry based learning	Written And Viva, quiz	F&S	II	
CO4	Describe the types of anumana	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning/ group discussion	Written And Viva,	F&S	II	

CO4	Describe Pancha Avayava Vakya	Cognitive / Recall	Must know	Knows	Lecture/ gamification/ Problem based learning / Group discussion	Written And Viva	F&S	II	
CO4, CO2	Associate Contemporary method of carrying out research with Pancha Avayava Vakya	Cognitive / Comprehension	Desirable to know	Knows how	Self directed learning, / Problem based learning / Group discussion	Written And Viva, open book test	F&S	II	
CO4	Define vyapti	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	II	
CO4	Describe the types of vyapti	Cognitive / Recall	Must know	Knows	Lecture/ Problem based learning	Written And Viva	F&S	II	
CO4	Define hetu	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	II	
CO4	Describe the types of hetu	Cognitive / Recall	Must know	Knows	group discussion	Written And Viva	F&S	II	
CO4	Enlist Sad-hetu Lakshana	Cognitive / Recall	Must know	Knows	Lecture/ Problem based learning	Written And Viva, quiz	F&S	II	
CO4	Define Hetwabhasa	Cognitive / Recall	Must know	Knows	Lecture/ Problem based learning	Written And Viva	F&S	II	
CO4	Explain the types of Hetwabhasa	Cognitive / Comprehension	Must know	Knows	Lecture/Tutorial group discussion	Written And Viva, puzzle, quiz	F&S	II	
CO4	Describe Ahetu	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning	Written And Viva	F&S	II	

CO4	Describe Tarkaas per Nyaya Sutra and Tarka Sangraha	Cognitive / Recall	Must know	Knows	Lecture Tutorial/ Problem based learning	Written And Viva, quiz	F&S	II	
CO4	Distinguish between Tarka as Aprama and tool in Anumana	Cognitive / Comprehension	Must know	Knows how	Enquiry based learning/ group discussion/debate	Written And Viva	F&S	II	
CO4	Justify the role of Tarka in Anumana	Cognitive / Comprehension	Must know	Knows how	Activity based learning/ Problem based learning / Group discussion	Written And Viva, open book test	F&S	II	
CO4	Demonstrate the practical applications of Anumana Pariksha (with few examples) in Sharir, Nidan, Chikitsa and Anusandhan (research).	Cognitive / Application	Must know	Knows how	Role play/ Game based learning / Group discussion	Written And Viva, open book test	F&S	II	
CO4	Recite the concern Verses from Tarkasangrah & CharakSamhita	Cognitive Recall	Desirable to know	knows	Audio clips, classroom Recitation	Viva, Recitation competetion	F&S	I	
Topic 5 - Yukti pariksha/Pramana Time (Lecture:- _2_ hours Non lecture _2_ hours									
CO4	Describe Yukti	Cognitive / Recall	Must know	Knows	Lecture/ Activity based learning/ Group discussion	Written And Viva	F&S	III	
CO4	Compare Yukti as an independent Pariksha and as a part of Anumana	Cognitive / Comprehension	Must know	Knows how	Lecture/ Activity based learning/ Problem based	Written And Viva, open book test	F&S	III	

					learning / Group discussion				
CO4	Describe the Importance of Yukti in Ayurveda	Cognitive / Recall	Must know	Knows how	Lecture / Activity based learning / Problem based learning / Group discussion	Written And Viva	F&S	III	
CO4	Describe the practical application of Yukti in Sharir, Nidan, Chikitsa and Anusandhan (research).	Cognitive Recall	Must know	Knows how	Lecture / Activity based learning / Problem based learning / Group discussion	Written And Viva	F&S	III	
CO4	Recite the concern Verses from CharakSamhita	Cognitive Recall	Desirable to know	knows	Audio clips, classroom Recitation	Viva, Recitation competition	F&S	III	
8. Topic 6 – Upamana Pramana Time (Lecture:- __2__ hours Non lecture _4__ hours)									
CO4	Define Upamana..Enlist the types of Upaman	Cognitive / Recall	Must know	Knows	Lecture / Activity based learning	Written And Viva	F&S	III	
CO4	Describe the Importance of Upamana in Ayurveda	Cognitive / Recall	Must know	Knows	Lecture / Problem based learning / Group discussion	Written And Viva	F&S	III	
CO4	Describe the practical applications of Upamana in Sharir, Nidan, Chikitsa and Anusandhan.	Cognitive / Comprehension	Must know	Knows	Lecture / Game based learning / Problem based learning / Group discussion	Written And Viva, quiz	F&S	III	
CO4	Recite the concern Verses from Tarkasangrah & Charak	Cognitive Recall	Desirable to know	knows	Audio clips, classroom Recitation	Viva, Recitation competition	F&S	III	

Topic 7 - Karya- Karana Siddhanta Time (Lecture:- _11_ hours Non lecture _13_ hours)									
CO5 CO2	Define Karya and Karana. List types of Karana. Charakokta Dashvidha Parikshya Bhava.	Cognitive/ Recall	Must know	Knows	Lecture Tutorial	Written and Viva	F & S	III	
CO5	Explain Charakokta Dashvidha Parikshya Bhava.	Cognitive/Co mprehension	Must know	Knows	Lecture/Problem Based learning	Written and Viva	F & S	III	
CO5 CO2	Describe the significance of Karya and Kaarana in Ayurveda	Cognitive/ Comprehensi on	Must know	Knows how	Lecture/problem based activity	Written and Viva	F & S	III	
CO5 CO2	Realises the utility of Charakokta Dashvidha Parikshya Bhav in understanding situations and taking decisions	Affective	Must know	Knows	Group discussion/ Role play/ Debate		F	III	
CO5 CO2	Distinguish different opinions regarding the manifestation of Karya from Karana	Cognitive / Application	Must know	Knows how	Edutainment Role play/ Debate group discussion/debat e	Written and Viva, quiz	F & S	III	
CO5 CO2	Analyse Satkaryavada and relate it with Ayurveda Siddhanta	Cognitive / Application	Must know	Knows how	Lecture & Group Discussion/deba te	Written and Viva	F & S	III	
CO5 CO2	Analyse Asatkaryavada & relate it with Ayurveda Siddhanta	Cognitive / Application	Must know	Knows how	Lecture & Group Discussion/deba te	Written and Viva	F & S	III	

CO5 CO2	Analyse Parinamavada & relate it with Ayurveda Siddhanta	Cognitive / Application	Must know	Knows how	Lecture & Group Discussion	Written and Viva	F & S	III	
CO5 CO2	Analyse Arambhavada & relate it with Ayurveda Siddhanta	Cognitive / Application	Must know	Knows how	Lecture & Group Discussion	Written and Viva	F & S	III	
CO5 CO2	Analyse Paramanuvada and relate it with Ayurveda Siddhanta	Cognitive / Application	Must know	Knows how	Lecture & Group Discussion	Written and Viva	F & S	III	
CO5 CO2	Explain Vivartavada and relate it with Ayurveda Siddhanta	Cognitive/ Comprehension	Must know	Knows how	Lecture & Group Discussion	Written and Viva	F & S	III	
CO5 CO2	Explain Kshanabhangurvada and relate it with Ayurveda Siddhanta	Cognitive/ Comprehension	Must know	Knows how	Lecture & Group Discussion	Written and Viva	F & S	III	
CO5 CO2	Explain Swabhavavada and relate it with Ayurveda Siddhanta	Cognitive/ Comprehension	Must know	Knows how	Lecture & Group Discussion	Written and Viva	F & S	III	
CO5 CO2	Explain Peelupakavada and relate it with Ayurveda Siddhanta	Cognitive/ Comprehension	Must know	Knows how	Lecture & Group Discussion/debate	Written and Viva	F & S	III	
CO5	Explain Pitharapakavada and relate it with Ayurveda Siddhanta	Cognitive/ Comprehension	Must know	Knows how	Lecture & Group Discussion/debate	Written and Viva	F & S	III	
CO5	Explain Anekantavada and relate it with Ayurveda Siddhanta	Cognitive/ Comprehension	Must know	Knows how	Lecture & Group Discussion	Written and Viva	F & S	III	
CO5 CO2	Explain Swabhavoparamavada.	Cognitive/ Comprehension	Must know	Knows how	Lecture & Group Discussion	Written and Viva	F & S	III	

CO5 CO2	Recite the concern Verses from Tarkasangrah & CharakSamhita	Cognitive Recall	Desirable to know	knows	Audio clips, classroom Recitation	Viva, Recitation competition	F&S	III	
CO5, CO2	Value cause and effect theory	Affective	Must know	Knows	Debate/Group Discussion	Viva	F	III	
CO 5, CO2	Analyse cause effect relationship, causality, causation in contemporary sciences	Cognitive / Comprehensi on	Nice to know	Knows	Self directed learning , Flipped classroom, Group Discussions.	-	-	III	

List of Practicals

Course AyUG-PV_: Practical List

Marks: 100

Hours:- 45 (included in non Lecture hours)

SN	Name of Topic/ Name of Practical	Term	Activity / Practical
P1	Ayurved Nirupan	I	Ayurved Perception identification: Ask the meaning of Ayurveda to your parents, friends and family members (min 10) and write it, give your opinion on it. Introduction to communication skills. Conduct of survey.
P2	Darshana and Padartha	I	<ul style="list-style-type: none">• Darshan concept development: Find and write names of different philosophies?• Discussions: meanings of philosophy, darshana, spirituality, religion. Are they same or different? Write in Activity Book.
P3	Hitayu/ Sukhayu lakshanas	I	<ul style="list-style-type: none">• Identification of characters of Hitayu, & Sukhayu in Healthy individuals.
P4	Dravya	I	<ol style="list-style-type: none">1. Identification of Guna and Karma. Make a list of 10 dravyas surrounding you and identify Guna and Karma in it.2. Panchbhautik nature identification: Demonstrate the Panchamahabhuta in any five ahara dravya and five sharira dravya/ avayava with a neat labeled diagramme. (ex-cell, blood, vata, pitta, kapha etc).3. Determination of Directions: Identify the directions in and enlist the content in each direction in your campus.4. Conceptualize Time : Discussion and understanding of Kala as per Ayurved and contemporary sciences.5. Categorization of Aushadhi dravya by dominance of Mahabhoot e.g. Parthiv / Jaleeya/ Agney/ Vayaveey/ Akasheey dravya with reasons.6. Early Clinical Exposure(ECE): Visit the OPD, find the diseases common for different age groups (balyavastha/ tarunyavastha/ vrudhdhavastha)

P5	Guna	II	<p>Identification:</p> <p>Sartha Guna : Identify concept of Shabda, Sparsha, Rupa, Rasa, Gandha in Dravya.</p> <p>Application and demonstration find the different therapies based on 5 Sartha Gunas. e.g. Gandha. Shabda, Sparsha.</p> <p>Observe /Experience/ Study / Read book or article present on (any one)</p> <p>Aromatherapy- Gandha Chikitsa. Music therapy/ Mamtra Chikitsa -Shabda guna.</p> <p>Sparsha- Touch therapy.</p> <p>Gurvadi Guna: Identify guna in any five ahara dravya : different vargas.</p> <p>in Sharir dravya: dosha, dhatu mala.</p> <p>Comparison Gurvadi gunas and correlate with concepts learned in Physics, Chemistry and Biology.</p> <p>Observation(survey) of the effects of Seasons on Gurvadi gunas in body, nature etc.</p> <p>Paradi Guna and their application in five examples.</p> <p>Atma Guna identification: Making or Framing their real life situations related to Atma Guna(sukha, dukkha etc)</p>
P6	Karma	II	<p>Conceptualization Karma, its application in branch of Ashtanga Ayurveda.(panchakarma/ Shastrakarma etc</p> <p>Illustration: Make a collage of pictures/ photos depicting five types of karma and their similarity with concepts learned in Physics, Chemistry etc.</p>
P7	Pratyaksha Praman	II	<p>Observation: Note down the factors from Prakruti analysis which you can</p>

			<p>understand through pratyaksh (like- colour, dry skin)</p> <p>Identification: Find few identification marks for identification of herbs/ minerals which need Pratyaksha.</p> <p>ECE: Pramans in examination of patient and Diagnosis of disease.</p> <p>Identifies the gunas which can be perceived by one sense (ekendriya) organ and more than one sense organ (Dwiendriya etc).</p> <p>Demonstrate with examples of Shabda,(snigdha/ ruksha etc) Sparsha (snigdha/ ruksha etc), Rupa, Rasa(taste threshold video), Gandha. (5 examples)</p>
P8	Pratyaksha Praman Limitations	II	<p>Observation: Find out how one can overcome limitations of Pratyaksha by advances in equipment. (microscope, telescope etc)</p> <p>Justification of use of various equipment in examination of patient and Diagnosis of disease. (X ray, USG etc)</p>
P9	Anuman Praman	II	<p>Application in Real life situation</p> <p>Write 3 examples of Vyapti (associations)in real life.</p> <p>Find and explain 5 examples of Anumana pramana as per types.</p> <p>Write 3 examples of panchavayava vakya. Correlate it with practicals that you have conducted.</p> <p>Examples of Hetvabhas.(Any three)</p> <p>Study use of inference in various sciences.</p>
P10	Samanya Vishesh Siddhant	III	<p>Identification: Visit vanaushadhi udyan of your college. Find samanyatva and visheshatva among plants.</p> <p>Illustration : Make a chart of food articles and activities to illustrate the relationship of samanya/vishesha with dosha-dhatu-malas.</p> <p>Application: Make a list/ collection of seasonal vegetables and fruits which are</p>

			Samanya/Vishesha with the dosha.(five examples)
P11	Samvay	III	Conceptualization Mention five real life examples of Nitya and anitya sambandha.
P12	Abhav	III	Application: Write five real life experiences of pragabhava, pradhwamsabhava, atyantabhava and anyonyabhav.
P13	Upman Praman	III	Illustration : Upamana in practical life or with your prior learning. (Examples of upamana from Ashtang Hridaya and Charak samhita)and prior learning (Examples in Physics, chemistry etc)
P14	Yukti Praman	III	Conceptualization: How various factors influence the process of the decision making? Application : Write 5 examples of Yukti in practical life or with your prior learning. ECE: Role of Yukti in Sharir, Nidan, Chikitsa and Anusandhan.
P15	Satkaryavad and other vadas	III	Justification : Parinama vada: Describe 3 real life or with your prior learning examples (Physics, Chemistry etc). Justification of Satkarya vada.: Describe 3 real life or with your prior learning examples. Swabhavoparama vada : Describe 3 real life or with your prior learning examples. Pakajotpatti siddhanta.: Write 3 examples of real life or with your prior learning. Justification of Arambhavada Describe 3 real life or with your prior learning examples
P16	Cause and effect theory	III	Illustration: Karya Karan Bhav: Write Samavayi, asamavayi and Nimitta Karana of a karya in real life examples (5 examples). Examples learned in Physics, Chemistry, Biology. Search Find out use of cause effect theory in other sciences. Schematic representation of cause effect in any examples.

			<p>Application: Assess the 10 factors of Charakokta Karyakarana bhava regarding any task consider the task as karya Remember and write theories of evolution you learned within and other than syllabus.</p>
A1	Other Activities in Journal.	I, II, III.	<ol style="list-style-type: none"> 1. Oral presentation: on allotted topic, PPT slides be made and Copy of slides be pasted in activity book 2. Quiz: Participation of all students in Quiz on some topic of Padartha vijnana. 3. Recitation: Important shloka of padartha vijnana recitation everyday or alternate days by students and written in diary. 4. Each student will do Pick and speak on topics of Padartha Vijnana. 5. e charts / animations etc.

Table 4: Learning objectives (Practical) of AyUG-PV

Practical									
A4 Course outcome	B4 Learning Objective (At the end of the session, the Students should be able to)	C4 Domain/ sub	D4 Must to know/ desirable to know/ Nice to know	E4 Level Does/ Shows how/ Knows how/ Know	F4 T-L method	G4 Assessment	H4 Formative /summative	I4 Term	J4 Integration
Practical1-Ayurved Nirupan Time (practical- 2 hours)									
CO1	Define Ayurved	Cognitive Recall	MK	knows	discussion	Viva	F & S	I	
CO1	Conduct the survey to identify the perception about Ayurved in the society	Psychomotor	MK	Shows	Demonstration/ discussion	Viva	F&S	I	
Practical2-Darshan and Padarth (Practical- 1hour)									
CO2	Discuss and compare the meanings of philosophy, darshana, spirituality, religion.	Cognitive / Recall	MK	Knows how	Demonstration/ discussion/ brainstorming	Viva	F &S	I	
CO2	Find and write names of different philosophies?	Cognitive/Recall	MK	Knows how	Demonstration/ discussion/ brainstorming	Viva	F&S	I	
Practical - 3(hitayu/Sukhayu) Time (Practical/ Clinical 2 hours) :									

CO 1	Discuss characters of hitayu, & Sukhayu	Cognitive /Recall	MK	Knows how	Demonstration/ discussion/ brainstorming	Viva	F&S	I	
CO 1	Identifies characters of hitayu, & Sukhayu in healthy individuals	Cognitive / Comprehension	MK	Knows How	Demo/Practical	Viva	F& S	I	
Practical 4- Dravya Time (Practical/ Clinical 6 hours)									
CO1,3	Define dravya, discuss nature of dravya	Cognitive Recall	MK	Knows how	Demonstration/ discussion/ brainstorming	Viva	F&S	I	
CO1,3	Identify pentaelemental nature of Ahar Dravya Aushadh Dravya in given examples	Cognitive/ Comprehension	MK	Shows	Practical/Demonstration	Viva/ Practicals	F& S	I	
CO1,3	Identify the Guna and Karma in the given dravya	Cognitive/ Comprehension	MK	Knows how	Practical/Demonstration	Viva/ Practicals	F&S	I	
CO1,3	Categorize the Aushadhi dravya by dominance of Mahabhoot e.g. Parthiv /Jaleeya/ Agney/ Vayaveey/ Akasheey dravya with reasons	Cognitive/ Comprehension	MK	Knows how	Practical/Demonstration	Viva/ Practicals	F&S	I	
CO1,3	Identify the directions in and enlist the content in each direction in your campus.	Cognitive/ Comprehension	MK	Knows how	Practical/Demonstration	Viva/ Practicals	F&S	I	
CO1,3	Discus the concept of Kala as per Ayurved and	Cognitive/ Recall	MK	Knows	Demonstration/ discussion/	Viva	F&S	I	

	contemporary sciences.				brainstorming				
CO1,3	find the diseases common for different age groups (balyavastha/ tarunyavastha/ vrudh'avastha)	Cognitive/ Comprehe nsion	MK	Knows how	Early Clinical Exposure.	Viva/ Practicals	F&S	I	
Practical - 5(Guna) Time (Practical/ Clinical 5 hours)									
CO 3	Discuss Guna,	Cognitive/ Recall	MK	Knows how	Demonstration/ discussion/ brainstorming	Viva	F&S	II	
CO 3	Identify Gunas in given Ahar dravya.	Cognitive/ Comprehe nsion	MK	Knows How	Demo/Practical	Viva/ Practicals	F&S	II	
CO 3	Identify Gunas in given Sharir dravya.	Cognitive/ Comprehe nsion	MK	Knows how	Practical/Demon stration	Viva/ Practicals	F&S	II	
CO 3	Identify the specification of Shabda, Sparsha, Rupa, Rasa, Gandha in Dravy	Cognitive/ Comprehe nsion	MK	Knows how	Demonstration of Dravyas like- kutki, gojihva, guduchi, yashtimadhu, sariva etc.	Viva/ Practicals	F&S	II	
CO 3	find the different therapies based on 5 Sartha Gunas. e.g.Gandha. Shabda, Sparsha.	Cognitive/ Comprehe nsion	DK	knows	Demonstration/ discussion/ brainstorming	Viva/ Practicals	F&S	II	

CO 3	Observe and record the effects of Seasons on Gurvadi gunas in body and nature	Cognitive/analysis	MK	Knows how	Practical/Demonstration	Viva/Practicals	F&S	II	
CO 3	Correlate Gurvadi gunas with concepts learned in Physics, Chemistry and Biology.	Cognitive/comprehension	MK	Knows how	Demonstration/discussion/brainstorming	Viva/Practicals	F&S	II	
CO 3	Identify the paratva-apatva in five examples	Cognitive/Comprehension	MK	Knows how	Practical/Demonstration	Viva/Practicals	F&S	II	
CO 3	Perform the Sanskar (toyasannikarsha/vasan/Bhavana)	Psychomotor	MK	Shows	Practical/Demonstration	Viva/Practicals	F&S	II	
CO 3	Frame the real life situations related to Atma Guna(sukha, dukkha etc)	Cognitive/Comprehension	MK	Knows how	Demonstration/discussion/brainstorming	Viva/Practicals	F&S	II	
Practical -6 Karma Time (Practical/ Clinical 3 hours)									
CO 3	Discuss Karma	Cognitive/Recall	MK	Knows how	Demonstration/discussion/brainstorming	Viva	F&S	II	
CO 3	Classify Karma in given	Cognitive/Comprehe	MK	Knows how	Demonstration/Practical	Viva/Practicals	F&S	II	

	examples (panchakarma/Shastrakarma)	nsion							
CO 3	Illustrate five types of Karma in collage of pictures/ photos	Cognitive/ Comprehe nsion	MK	Knows how	Practical/Demon stration	Viva/ Practicals	F&S	II	
CO 3	compare Karma with concepts learned in Physics, Chemistry etc.	Cognitive/ Comprehen sion	MK	Knows	Practical/Demon stration	Viva/ Practicals	F&S	II	
Practical – 7 Pratyaksha Praman Time (Practical/ Clinical 5 hours)									
CO4	Discuss Pratyaksha Praman	Cognitive/ Recall	MK	Knows how	Demonstration/ discussion/ brainstorming	Viva	F&S	II	
CO4	Find identification marks for identification of herbs/ minerals which need Pratyaksha.	Cognitive/ Comprehe nsion	MK	Knows how	Demonstration/ Practical	Viva/ Practicals	F&S	II	
CO4	Note down the factors from Prakruti analysis which need pratyaksh (like- colour, dry skin)	Cognitive/ Comprehe nsion	MK	Knows how	Practical/Demon stration	Viva/ Practicals	F&S	II	
CO4	Discuss the use of pratyaksha in examination of patient and Diagnosis of disease.	Cognitive/ Comprehe nsion	MK	Knows how	ECE/ discussion	Viva/ Practicals	F&S	II	
CO4	identifies with examples of Shabda,(snigdha/ ruksha etc) Sparsha (snigdha/ ruksha etc),	Cognitive/ Comprehe nsion	MK	Knows how	Practical/Demon stration/ Shabd from recordings, (snigdha/	Viva/ Practicals	F&S	II	

	Rupa, Rasa(taste threshold video), Gandha.				ruksha etc) Sparsha by touching or instruments. (snigdha/ruksha etc), Rupa, Rasa(taste threshold video), Gandha.(intensity of Smell)				
CO4	Identifies the gunas which can be perceived by one sense (ekendriya) organ and more than one sense organ (Dwiendriya etc).	Cognitive/Comprehension	MK	Knows how	Demonstration/discussion/brainstorming	Viva/Practicals	F&S	II	
Practical -8 Pratyaksha Badhakar Bhav Time (Practical/ Clinical 2 hours)									
CO4	Discuss Pratyaksha Badhakar Bhav (limitations of pratyaksha.)	Cognitive/recall	MK	Knows	Lecture	Viva	F&S	II	
CO4	Identify and classifies Pratyaksha badhakar Bhav in given examples.	Cognitive/Comprehension	MK	Knows how	Demonstration/Practical. Ask examples or encourage to identify examples.	Viva/Practicals	F&S	II	

CO4	Justify the use of various equipment in examination of patient and Diagnosis of disease.	Cognitive/Comprehension	MK	Knows how	Demonstration/discussion/brainstorming/Video Clips	Viva/Practicals	F&S	II	
Practical -9 Anuman praman Time (Practical/ Clinical 5 hours)									
CO4	Discuss Anuman praman	Cognitive/Recall	MK	Knows	Demonstration/discussion/brainstorming	Viva	F&S	II	
CO4	Identify and classify Anuman praman with type in given examples.	Cognitive/Comprehension	MK	knows	Demonstration/Practical, Ask examples or encourage to identify examples.	Practical/Demonstration	F&S	II	
CO4	Find and discuss examples of Vyapti (associations) in real life.	Cognitive/Comprehension	MK	Knows how	Practical/Demonstration. Ask examples or encourage to identify examples.	Practical/Demonstration	F&S	II	
CO4	Apply panchavayava vakya for drawing inference in practicals conducted	Cognitive/Comprehension	MK	Knows how	Practical/Demonstration	Practical/Demonstration	F&S	II	
CO4	Identify and discuss Hetvabhas in given examples	Cognitive/Comprehension	MK	Knows how	Practical/Demonstration. Ask examples or encourage to identify	Practical/Demonstration	F&S	II	

					examples.				
CO4	Draw inference in various sciences on the basis of Vyapti.	Cognitive/ recall	MK	knows	Demonstration/ discussion/ brainstorming	Practical/De monstration	F&S	II	
Practical -10 Samanya Vishesh Siddhant Time (Practical/ Clinical 5 hours)									
CO 3	Discuss Samanya vishesh Siddhant	Cognitive/ Rcall	MK	Knows	Demonstration/ discussion/ brainstorming	Viva	F&S	III	
CO 3	Identify and classifies Samanya vishesh Siddhant with type in given examples.	Cognitive/ Comprehe nsion	MK	Knows how	Demonstration/ Practical/ Ask examples or encourage to identify examples.	Viva/ Practical	F&S	III	
CO 3	Identify samanyatva and visheshatva among plants in Vanaushadhi udyan	Cognitive/ Comprehe nsion	MK	Knows how	Practical/Demon stration.	Viva/ Practicals	F&S	III	
CO 3	Make a chart/ eChart of food articles and activities to illustrate the relationship of samanya/vishesha with dosha-dhatu-malas.	Cognitive/ Comprehe nsion	MK	Knows how	Practical/Demon stration	Presentation/ Viva/ Practicals	F&S	III	
CO 3	Make a poster seasonal vegetables and fruits which are Samanya/Vishesha with the dosha.	Cognitive/ Comprehe nsion	MK	Knows how	Practical	Presentation /Viva/ Practicals	F&S	III	
Practical -11 Samavay Time (Practical/ Clinical 1 hour)									

CO 3	Discuss Samavay	Cognitive/ Recall	MK	Knows	Demonstration/ discussion/ brainstorming	Viva	F&S	III	
CO 3	Mention five real life examples of Nitya and anitya sambandha.	Cognitive/ Comprehe nsion	MK	Knows how	Demonstration/ Practical/ Ask examples or encourage to identify examples.	Viva/ Practical	F&S	III	
Practical -12 Abhav Time (Practical/ Clinical 1)									
CO 3	Discuss Abhav	Cognitive/ Recall	MK	Knows how	Demonstration/ discussion/ brainstorming	Viva	F&S	III	
CO 3	Write real life experiences of pragabhava, pradhwamsabhava, atyantabhava and anyonyabhav.	Cognitive/ Comprehe nsion	MK	Shows	Demonstration/ Practical/ Ask examples or encourage to identify examples.	Viva	F&S	III	
Practical - 13 Upman Praman Time (Practical/ (Practical/ Clinical 1 hour)									
CO4	Discuss Upaman Praman	Cognitive/ Recall	MK	Knows how	Demonstration/ discussion/ brainstorming	Viva/ Practical	F&S	III	
CO4	Illustrate Upamana in practical examples and real life situation.	Cognitive/ Comprehe nsion	MK	Knows how	Demonstration/ Practical/ Ask examples or encourage to identify examples.	Viva/ Practicals	F&S	III	
CO4	Identify Examples of upamana from Ashtang	Cognitive/ Comprehe	MK	Knows how	Demonstration/ discussion/	Viva/ Practicals	F&S	III	

	Hridaya and Charak Samhita	nsion			brainstorming.				
CO4	Identify examples in Physics, chemistry biology where Upaman is used	Cognitive/ Comprehension	MK	Knows how	Demonstration/ discussion/ brainstorming/ Ask examples or encourage to identify examples.	Viva/ Practicals	F&S	III	
Practical -14 Yukti Praman Time (Practical/ Clinical 1 hour)									
CO4	Discuss Yukti Praman	Cognitive/ Recall	MK	Knows	Demonstration/ discussion/ brainstorming	Viva	F&S	III	
CO4	Illustrate examples of Yukti in practical life or with your prior learning.	Cognitive/ Comprehension	MK	Knows how	Demonstration/ Practical/ Ask examples or encourage to identify examples.	Viva/ Practicals Quiz	F&S	III	
CO4	Identify Role of Yukti in Nidan, Chikitsa and Anusandhan (research).	Cognitive/ Comprehension	MK	Knows how	ECE/ Demonstration/	Viva/ Practicals/ PBL	F&S	III	
Practical -15 Various Vadas Time (Practical/ Clinical 3 hour)									
CO5 CO2	Discuss Satkaryavad	Cognitive/ Recall	MK	Knows how	Demonstration/ discussion/ brainstorming	Viva	F&S	III	
CO5 CO2	Justify Satkaryavad through real life	Cognitive/ comprehension	MK	Knows how	Demonstration/ Practical/ /Ask examples or	Viva/ Practicals/ PBL	F&S	III	

	examples/ examples from prior learning				encourage to identify examples.				
CO5 CO2	Justify Parinamvad through real life examples/ examples from prior learning	Cognitive/ comprehension	MK	Knows how	Practical/Demonstration/ /Ask examples or encourage to identify examples.	Viva/ Practicals	F&S	III	
CO5 CO2	Justify Pakajotpatti through real life examples/ examples from prior learning	Cognitive/ comprehension	MK	Knows how	Practical/Demonstration/ /Ask examples or encourage to identify examples.	Viva/ Practicals	F&S	III	
CO5 CO2	Justify Swabhavoparamvad through real life examples/ examples from prior learning	Cognitive/ comprehension	MK	Knows how	Demonstration/ discussion/ brainstorming/ /Ask examples or encourage to identify examples.	Viva/ Practicals	F&S	III	
CO5 CO2	Justify Arambhavad through real life examples/ examples from prior learning	Cognitive/ comprehension	MK	Knows how	Demonstration/ Practical//Ask examples or encourage to identify examples.	Viva/ Practicals	F&S	III	
Practical -16 Cause and Effect theory Time (Practical/ Clinical 2 hours)									
CO5, CO2	Discuss Cause and effect theory	Cognitive/ comprehension	MK	Knows	Demonstration/ discussion/ brainstorming	Viva/ Quiz	F&S	III	
CO5 CO2	Identify Samavayi, Asamavayi and Nimitta	Cognitive/ Comprehe	MK	Knows How	Demonstration/ Practical/Ask	Viva/ Practicals	F&S	III	

	karan of a Karya in real life examples/ examples with prior learning	nsion			examples or encourage to identify examples.				
CO5	Find out use of cause effect theory in other sciences.	Cognitive/ comprehension	MK	Knows how	Practical/Demonstration	Viva/ Practicals/ Debate	F&S	III	
CO5	Represent cause and effect schematically in any examples	Cognitive/ comprehension	MK	Knows how	Practical/Demonstration	Viva/ Practicals	F&S	III	
CO5	Assess the 10 factors of Charakokta Karyakarana bhava regarding any task consider the task as karya	Cognitive/ analysis	MK	Knows how	Practical/Demonstration	Viva/ Practicals	F&S	III	
CO5	Write theories of evolution you learned within and other than syllabus.	Cognitive/ comprehension	MK	Knows how	Practical/Demonstration	Viva/ Practicals	F&S	III	

Table 5: Non Lecture Activities Course AyUG-PV**Table 5- Course AyUG-PV Non Lecture Activities- 140**

	List non lecture Teaching-Learning methods *	No of Activities
1	GROUP DISCUSSION	20
2	PRACTICALS AND DEMONSTRATIONS	45
3	ACTIVITY BASED LEARNING	10
4	PROBLEM BASED LEARNING	10
5	ENQUIRY BASED LEARNING	8
6	CASE BASED LEARNING	6
7	GAME BASED LEARNING	8
8	FLIPPED CLASSROOMS	6
9	DEBATE	8
10	SEMINARS	6
11	TUTORIALS	5
12	ROLE PLAY	5
13	SELF DIRECTED LEARNING	3
		140

Table 6: Assessment Summary AyUG-PV**6 A - Number of Papers and Marks Distribution**

S.No.	Subject Code	Papers	Theory	Practical/Clinical Assessment					Grand Total
				Practical/ Clinical	Viva	Electives	IA	Sub Total	
1.	AyUG-PV	2	200	100	60	10 (Set-FB)	30	200	400

6 B - Scheme of Assessment (formative and Summative)

SR.NO.	PROFESSIONAL COURSE	DURATION OF PROFESSIONAL COURSE		
		First Term (1-6 Months)	Second Term (7-12 Months)	Third Term (13-18 Months)
1	First	3 PA & First TT	3 PA & Second TT	3 PA & UE

PA: Periodical Assessment; TT: Term Test; UE: University Examinations

6 C - Calculation Method for Internal assessment Marks (30 Marks)

TERM	PERIODICAL ASSESSMENT*					TERM TEST**	TERM ASSESSMENT	
	A	B	C	D	E	F	G	H
	1 (15 Marks)	2 (15 Marks)	3 (15 Marks)	Average (A+B+C/3)	Converted to 30 Marks (D/15)*30)	Term Test (Marks converted to 30)	Sub Total /60 Marks	Term Assessment (.../30)
FIRST							E+F	(E+F)/2
SECOND							E+F	(E+F)/2
THIRD						NIL		E
Final IA	Average of Three Term Assessment Marks as Shown in 'H' Column.							
	Maximum Marks in Parentheses *Select an Evaluation Methods which is appropriate for the objectives of Topics from the Table 6 D for Periodic assessment. Conduct 15 marks assessment and enter marks in A, B, and C. ** Conduct Theory (100 Marks)(MCQ(20*1 Marks), SAQ(8*5), LAQ(4*10)) and Practical (100 Marks) Then convert to 30 marks.							

6 D -Evaluation Methods for Periodical Assessment

S. No.	Evaluation Methods
1.	Activities Indicated in Table 3 - Column G3 as per Indicated I, II or III term in column I3.
2.	Practical / Clinical Performance
3.	Viva Voce, MCQs, MEQ (Modified Essay Questions/Structured Questions)
4.	Open Book Test (Problem Based)
5.	Summary Writing (Research Papers/ Samhitas)
6.	Class Presentations; Work Book Maintenance
7.	Problem Based Assignment
8.	Objective Structured Clinical Examination (OSCE), Objective Structured Practical Examination (OPSE), Mini Clinical Evaluation Exercise (Mini-CEX), Direct Observation of Procedures (DOP), Case Based Discussion (CBD)
9.	Extra-curricular Activities, (Social Work, Public Awareness, Surveillance Activities, Sports or Other Activities which may be decided by the department).
10.	Small Project
11.	AyUG-PV Specific Test on Topics in list of practicals.

6 E- Paper Layout

I PROFESSIONAL BAMS EXAMINATIONS

AyUG-PV

Paper-I

Time: 3 Hours Maximum Marks: 100

INSTRUCTIONS: All questions compulsory

TOTAL MARKS 100

		Number of Questions	Marks per question	Total Marks
Q 1	Multiple Choice Questions (MCQ)	20	1	20
Q 2	Short answer questions (SAQ)	8	5	40
Q 3	Long answer questions (LAQ)	4	10	40
				100

I PROFESSIONAL BAMS EXAMINATIONS

AyUG PV

Paper-II

Time: 3 Hours Maximum Marks: 100

INSTRUCTIONS: All questions compulsory

TOTAL MARKS 100

		Number of Questions	Marks per question	Total Marks
Q 1	Multiple Choice Questions (MCQ)	20	1	20
Q 2	Short answer questions (SAQ)	8	5	40
Q 3	Long answer questions (LAQ)	4	10	40
				100

6 F- Disribution of Theory Exam

Paper I				D Type of Questions "Yes" can be asked. "No" should not be asked.		
A List of topics	B Term	C Marks	MCQ (1 mark)	SAQ (5 marks)	LAQ (10 marks)	
1	Ayurveda nirupana	I	25	Yes	Yes	Yes
2	Padartha and darshana nirupana	I		Yes	Yes	Yes
3.	Dravya vijnaneeyam	II	48	Yes	Yes	Yes
4.	Guna vijnaneeyam	II		Yes	Yes	Yes
5.	Karma vijnaneeyam	II		Yes	Yes	Yes
6.	Samanya vijnaneeyam	III	27	Yes	Yes	Yes
7.	Vishesha vijnaneeyam	III		Yes	Yes	Yes
8.	Samavaya vijnaneeyam	III		Yes	Yes	No
9	Abhava vijnaneeyam	III		Yes	Yes	No

Paper II				D Type of Questions "Yes" can be asked. "No" should not be asked.		
A List of Topics	B Term	C Marks	MCQ (1 Mark)	SAQ (5 Marks)	LAQ (10 Marks)	
1	Pariksha	I	26	YES	YES	YES
2	Aptopdesha Pariksha/Pramana	I		YES	YES	YES
3.	Pratyaksha Pariksha/Pramana	II	42	YES	YES	YES
4.	Anumanapariksha/Pramana	II		YES	YES	YES
5.	Yuktipariksha/Pramana	III	32	YES	YES	NO
6.	UpamanaPramana	III		YES	YES	NO
7.	Karya- Karana Siddhanta	III		YES	YES	YES

6 G- Question paper blue print

Paper I –

A Question Sr. No	B Type of Question	C Question Paper Format
.Q1	<p>Multiple choice Questions (MCQ)</p> <p>20 Questions</p> <p>1 mark each</p> <p>All compulsory</p> <p>(Must Know 15 MCQ Desirable to know 3 MCQ Nice to know 2 MCQ)</p>	<ol style="list-style-type: none"> 1. Topic number 1 2. Topic number 2 3. Topic number 3 4. Topic number 4 5. Topic number 5 6. Topic number 6 7. Topic number 7 8. Topic number 8 9. Topic number 9 10. Topic number 2 11. Topic number 3 12. Topic number 4 13. Topic number 5 14. Topic number 6 15. Topic number 7 16. Topic number 9 17. Topic number 1 18. Topic number 2 19. Topic number 3 20. Topic number 4
Q2	<p>Short answer Questions (SAQ)</p> <p>Eight Questions</p> <p>5 Marks Each</p> <p>All compulsory</p> <p>(Must know 7 . Desirable to know 1 No Questions on Nice to know.)</p>	<ol style="list-style-type: none"> 1. Topic no.1 2. Topic no.2 3. Topic no.3 4. Topic no.4 5. Topic no.5 6. Topic no.6/ Topic no.7 7. Topic no.8/ Topic no.9 8. Topic no.3/ Topic no.4
Q3	<p>Long answer Questions (LAQ)</p> <p>Four Questions</p> <p>10 marks each</p> <p>All compulsory</p> <p>(All questions on Must to know. No Questions on Nice to know and Desirable to know.)</p>	<ol style="list-style-type: none"> 1. Topic no.1/ Topic no.2 2. Topic no.3 3. Topic no.4/Topic no.5 4. Topic no.6/ Topic no.7

Paper II

A Question Sr. No	B Type of Question	C Question Paper Format
Q1	<p>Multiple choice Questions (MCQ)</p> <p>20 Questions</p> <p>1 mark each</p> <p>All compulsory</p> <p>(Must know 15 MCQ Desirable to know 3 MCQ Nice to know 2 MCQ)</p>	<ol style="list-style-type: none"> 1. Topic number 1 2. Topic number 2 3. Topic number 3 4. Topic number 4 5. Topic number 5 6. Topic number 6 7. Topic number 7 8. Topic number 1 9. Topic number 2 10. Topic number 3 11. Topic number 4 12. Topic number 5 13. Topic number 6 14. Topic number 7 15. Topic number 1 16. Topic number 2 17. Topic number 3 18. Topic number 4 19. Topic number 7 20. Topic number 4
Q2	<p>Short answer Questions (SAQ)</p> <p>Eight Questions</p> <p>5 Marks Each</p> <p>All compulsory</p> <p>(Must know 7 . Desirable to know 1 No Questions on Nice to know.)</p>	<ol style="list-style-type: none"> 1. Topic no.1 2. Topic no.2 3. Topic no.3 4. Topic no.4 5. Topic no.5 6. Topic no.6 7. Topic no.7 8. Topic no.3/ Topic no.4
Q3	<p>Long answer Questions (LAQ)</p> <p>Four Questions</p> <p>10 marks each</p> <p>All compulsory</p> <p>(All questions on must know No Questions on Nice to know and Desirable to know)</p>	<ol style="list-style-type: none"> 1. Topic no.1/ Topic no.2 2. Topic no.3 3. Topic no.4 4. Topic no.7

6 H Distribution of Practical Exam

Practical – (Practical 100 +Viva 60+Elective 10+ IA 30) =(Total 200 Marks)

SN	Heads	Marks
1	Practical (Total Marks 100)	100
a.	Spotting (4 Spots) Problem based on Principles in PV. Topics 1. Pratyaksha praman/Pratyaksha Badhakar Bhav 2. Vada (Any one) 3. Abhav/Samavay 4. Upaman/Yukti	20
b.	Journal of Activity book/ Projects. (Viva on journal and communication skill)	20
c.	Practical I (10 Marks Each) 1. Identify panchamahabhoot dominance in the given dravya 2. Identify Samanya- Vishesh in the given dravyas 3. Identify the Gunas in the given dravyas (Use different dravys for different students.)	30
d.	Practical II (Problem based questiones/ Situations)(10 Marks Each)(Any three) 1. Identify and explain the Karya Karan with types in given problem 2. Frame and Write Panchavayav vakya for the given anumana. 3. Identify Vyapti, Paksh, Sadhya, Hetu, Pakshadharmata, Sapaksha, Vipaksha in the give example. 4. Identify and explain Hetvabhas in given example. 5. Identify the vada applicable in given example.(any one vada.) 6. Identify Upama, Sajna- sajni sambhandha in given example.	30
2	Viva Voce	60
	Recitation of Shloka: 10 marks (sutras in Tarka sangraha, Samhitas, other)	
	Questions on Darshan 10 marks	
	Question on Dravya/ Guna/ Karma. 10 marks	
	Question on Samany/vishesh/samavaya/ Abhav 10 Marks	
	Question on one Praman 10 Marks	

	Question on Karya karan bhav 10 Marks.	
3	Internal Assessment	30
4	Electives	10
		200

7. References /Resources

Reference Books

PadarthaVignana books

	Authorus
1. Padarthavigyan	Acharya Ramraksha Pathak
2. AyurvediyaPadarthaVigyana	Vaidya Ranjit Rai Desai
3. Ayurved Darshana	Acharya Rajkumar Jain
4. PadarthaVigyana	Kashikar
5. PadarthaVigyana	Balwant Shastri
6. SankhyatantwaKaumadi	GajananShastri
7. Psycho Pathology in Indian Medicine	Dr. S.P. Gupta
8. CharakEvumSushrutkeDarshanik Vishay	Prof.Jyotirmitra Acharya
9. AyurvediyaPadarthaVigyana	Dr. Ayodhya Prasad Achal
10. PadarthaVigyana	Dr. Vidyadhar Shukla
11. Post graduate text book of Samhitha&Sidhanta	Dr P.P.Kirathamoorthy and Dr Anoop AK
12. Padartha Vigyana	Dr. Ravidutta Tripathi
13. AyurvediyaPadarthaVigyana	Vaidya Ramkrishna Sharma Dhand
14. AyurvediyaPadartha Vignan Parichaya	Vaidya Banwarilal Gaur
15. AyurvediyaPadartha Darshan	Pandit Shivhare
16. Scientific Exposition of Ayurveda	Dr. Sudhir Kumar
17. Padarthavignana and Ayurveda itihasa	Dr C R Agnives
18. Essentials of padarthavignana	Dr Vinodkumar MV
19. Padarthavignanevam Ayurveda Itihas	Dr RamnihorTapsi Jaiswal
20. AyurvediyaPadarthavignana	Dr C R Agnives
21. AyurvediyaMoulikaSiddhanta	Dr V J Thakkar

**COURSE CURRICULUM FOR FIRST PROFESSIONAL BAMS
(PRESCRIBED BY NCISM)**



**KRIYA SHARIRA
(SUBJECT CODE- AyUG-KS)
HUMAN PHYSIOLOGY**

(Applicable from 2021-22 batch onwards for 5 years or until further notification by NCISM, whichever is earlier)



प्राणाभिसरः प्राणायतनानाम्

**BOARD OF AYURVEDA
NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE
NEW DELHI-110058**



Kriya

NCISM
I professional Ayurvedcharya
(BAMS)

Subject Code: AyUG KS

Kriya Sharir

Summary

AyUG KS Total number of Teaching hours: 600			
Lecture hours (LH) - Theory		150 Hours	150 Hours (LH)
Paper I	75 Hours		
Paper II	75 Hours		
Non-Lecture hours (NLH) – Theory		50 Hours	250 Hours (NLH)
Paper I	25 Hours		
Paper II	25 Hours		
Non-Lecture hours (NLH) - Practical		200 Hours	

AyUG KS Examination (Papers & Mark Distribution)				
Item	Theory Component Marks	Practical Component Marks		
		Practical	Viva	IA
Paper I	100	100	70	30
Paper II	100			
Sub-Total	200	200		
Total marks	400			

Preface

Kriya Sharir (Human Physiology) is an important subject of the BAMS program for the undergraduate students of Ayurveda. The term sharir means 'in the sharir' or 'related to the sharir' thus Sharir Kriya deals with the study of the human body concerning its physiological norms i.e., the functioning of the human body in its normal state. This subject refers to the physiology and biochemistry of contemporary medical science.

The swasthya of an individual is based on 3 pillars of the body i.e., dosha, dhatu & mala. Kriya Sharir subject mainly deals with these 3 pillars. The basic concepts, knowledge, and applicability of Tridosha (Vata, Pitta, Kapha), Sapta Dhatus (Rasa, Rakta, Mamsa, Meda, Asthi, Majja, Shukra), and Trimala (Mutra, Purish, Sweda) are very important in the critical understanding of the disease. Kriya Sharir also deals with Prakriti, Strotas, Kostha, Agni, Oja, Mana, Aahar (Basic principles of food), shatkriyakal, the system-wise study of contemporary science, senses function and dysfunction, etc. All these fundamental topics are essential for the proper understanding of etiopathogenesis, diagnosis of disease, and its management which will be covered in para-clinical and clinical subjects.

New curriculum of Kriya Sharir is designed considering cognitive, affective, and psychomotor domains. There are group discussions, workshops, field visits, and activities beyond the textbook during the practical hours like preparation of charts, models, seminar presentations by students. Kriya Sharir subject also deals with teaching-learning methods like role play, flipped the classroom, etc. Some assessment methods like OSPE, PBL, DOPS, CBD, skill assessment, etc are incorporated. The main aim of the curriculum is to highlight the basic knowledge and to give a new scientific approach to undergraduate students to develop their skills of Ayurveda and make them competent to apply in clinical practice and research.

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Course Code and Name of Course

	Course code	Name of Course
	AyUG KS	Kriya Sharir (Human Physiology)

AyUG KS Course

Table 1- Course learning outcomes and matched PO.

SR1 CO No	A1 Course learning Outcomes (CO) AyUG KS At the end of the course AyUG-KS, the student should be able to-	B1 Course learning Outcomes matched with program learning outcomes.
CO 1	Explain all basic principles & concepts of Kriya Sharir along with essentials of contemporary human physiology and biochemistry related to all organ systems.	PO1, PO2
CO 2	Demonstrate and communicate normal and abnormal variables pertaining to Kriya Sharir such as Sara, Agni, Koshta, Srotas etc.	PO2, PO3
CO 3	Differentiate between Prakriti and Vikriti in the individuals after carrying out relevant clinical examinations.	PO1, PO2, PO3, PO5
CO 4	Carry out clinical examination and experiments using equipments with interpretation of their results	PO4
CO 5	Differentiate the strengths & limitations of Ayurved and contemporary sciences	PO2
CO 6	Present a short project work / research activity covering the role of Kriya Sharir in preventive and promotive healthcare.	PO5, PO6, PO7, PO8, PO9
CO 7	Show a sense of curiosity and questioning attitude towards the life processes and to display compassion and ethical behaviour	PO2, PO5, PO6, PO7, PO9
CO 8	Effectively communicate verbally and in writing preferably using Ayurvedic terminology along with contemporary terminology among peers, teachers and community	PO8, PO9

Table 2 : Contents of Course AyUG KS

Paper I – AyUG-KS					
Sr No	A2 List of Topics AyUG-KS Paper I	B2 Term	C2 Marks	D2 Lecture hours	E2 Non-Lecture hours
PART-A (Marks-60)					
1	Sharir: Definition and synonyms of term Kriya, Sharir & Shaarir. Description of Sharir Dosha and Manasa Dosha. Mutual relationship between Triguna-Tridosha & Panchmahabhuta.	I	08	2	1
2	Basic principles of Ayurveda: Dosha dhatu mala mulam hi shariram. Description of basics of Srotas	I		2	1
3.	Tridosha: General description of Tridosha. Inter relationship between Ritu-Dosha-Rasa- Guna. Biological rhythms of Tridosha on the basis of day-night-age-season and food intake. Role of Dosha in the formation of Prakriti of an individual and in maintaining of health. Prakrita and Vaikrita Dosha.	I		3	0
4.	Vata Dosha: Vyutpatti (derivation), Nirukti (etymology) of the term Vata, general locations, general properties and general functions of Vata, five types of Vata (Prana, Udana, Samana, Vyana, Apana) with their specific locations, specific properties, and specific functions.	I	26	6	2
5.	Pitta Dosha: Vyutpatti, Nirukti of the term Pitta, general locations, general properties and general functions of Pitta, five types of Pitta (Pachaka, Ranjaka, Alochaka, Bhrajaka, Sadhaka) with their specific locations, specific properties, and specific functions. Similarities and differences between Agni and Pitta.	I		5	1
6.	Kapha Dosha: Vyutpatti, Nirukti of the term Kapha, general locations, general properties and general functions of Kapha, five types of Kapha (Bodhaka, Avalambaka, Kledaka, Tarpaka, Śleshaka) with their specific locations, specific properties, and specific functions.	II		4	1
7.	Dosha Vriddhi-Kshaya: Etiological factors responsible for Dosha Vriddhi, Dosha Kshaya and their manifestations.	II		1	1
8.	Kriyakala: Concept of Kriyakala, applied physiology of diseases produced due the vitiation of vata, pitta and kapha.	II		1	1
9	Prakriti: Deha- Prakriti: Vyutpatti, Nirukti, various definitions and synonyms for the term "Prakriti". Intra-uterine and extra-uterine factors influencing Deha-Prakriti, classification and characteristic features of each kind of Deha-Prakriti. Manasa- Prakriti: Introduction and types of Manasa- Prakriti	II	7	3	
10.	Ahara: Definition, classification and significance of Ahara,	III	3	1	

	Ahara-vidhi-vidhana, Ashta Aharavidhi Viseshayatana, Ahara Parinamkar Bhava.				
11.	Agni: Definition and importance, synonyms, classification, location, properties and functions of Agni and functions of Jatharagni, Bhutagni, and Dhatvagni.	III	26	4	1
12.	Aharapaka (Process of digestion): Description of Annavaha Srotas and their Mula. Description of Avasthapaka (Madhura, Amla and Katu). Description of Nishthapaka (Vipaka) and its classification. Role of Grahani & Pittadhara Kala. Separation of Sara and Kitta. Absorption of Sara. Genesis of Vata-Pitta-Kapha during Aharapaka process. Definition of the term Koshtha. Classification of Koshtha and the characteristics of each type of Koshtha.	III		7	2
PART-B (Marks-40)					
1	Physiology Homeostasis: Definition and mechanisms of maintenance of homeostasis. Cell physiology. Membrane physiology. Transportation of various substances across cell membrane. Resting membrane potential and action potential. Acid-base balance, water and electrolyte balance. Study of basic components of food.	I		5	1
2	Physiology of Respiratory system: functional anatomy of respiratory system. Definition of ventilation, mechanism of respiration, exchange and transport of gases, neural and chemical control of respiration, artificial respiration, asphyxia, hypoxia. Introduction to Pulmonary Function Tests.	II	23	5	2
3	Physiology of Gastrointestinal system: Functional anatomy of gastro-intestinal tract, mechanism of secretion and composition of different digestive juices. Functions of salivary glands, stomach, liver, pancreas, small intestine and large intestine in the process of digestion and absorption. Movements of the gut (deglutition, peristalsis, defecation) and their control. Enteric nervous system. Digestion and metabolism of proteins, fats and carbohydrates. Vitamins & Minerals- sources, daily requirement, functions, manifestations of hypo and hypervitaminosis.	II		7	2
4	Physiology of Nervous System: General introduction to nervous system, neurons, mechanism of propagation of nerve impulse, physiology of CNS, PNS, ANS; physiology of sensory and motor nervous system, Functions of different parts of brain and physiology of special senses, intelligence, memory, learning and motivation. Physiology of sleep and dreams, EEG. Physiology of speech and articulation. Physiology of temperature regulation.	III	17	7	3
5	Physiology of Endocrine glands: General introduction to endocrine system, classification and characteristics of hormones, physiology of all endocrine glands, their functions and their effects.	III		6	2

Paper II – AyUG-KS					
	A2 List of Topics Paper II	B2 Term	C2 Marks	D2 Lecture hours	E2 Non- Lecture hours
PART-A (Marks-60)					
1	Dhatu: Etymology, derivation, definition, general introduction of term Dhatu, different theories related to Dhatuposhana (Dhatuposhana Nyaya)	I	18	2	1
2	Rasa Dhatu: Etymology, derivation, location, properties, functions and Praman of Rasa-dhatu. Physiology of Rasavaha Srotas, Formation of Rasa Dhatu from Aahara Rasa, circulation of Rasa (Rasa-Samvahana), role of Vyana Vayu and Samana Vayu in Rasa Samvahana. Description of functioning of Hridaya. Ashtavidha Sara, characteristics of Tvakasara Purusha, conceptual study of Aashraya-Aashrayi Bhaava and its relation to Rasa and Kapha. Manifestations of kshaya and Vriddhi of Rasa	I		4	1
3.	Rakta Dhatu: Etymology, derivation, synonyms, location, properties, functions and Praman of Rakta Dhatu. Panchabhautikatva of Rakta Dhatu, physiology of Raktavaha Srotas, formation of Raktadhatu, Ranjana of Rasa by Ranjaka Pitta, features of Shuddha Rakta, specific functions of Rakta, characteristics of Raktasara Purusha, manifestations of Kshaya and Vriddhi of Raktadhatu, mutual interdependence of Rakta and Pitta.	I		3	1
4.	Mamsa Dhatu: Etymology, derivation, synonyms, location, properties and functions of Mamsa Dhatu, physiology of Mamsavaha Srotas, formation of Mamsa Dhatu, characteristics of Mamsasara Purusha, manifestations of Kshaya and Vriddhi of Mamsa Dhatu, Concept of Peshi.	I		2	1
5.	Meda Dhatu: Etymology, derivation, location, properties, functions and Praman of Meda Dhatu, physiology of Medovaha Srotas, formation of Medo Dhatu, characteristics of Medasara Purusha and manifestations of Kshaya and Vriddhi of Meda.	I		3	1
6.	Asthi Dhatu: Etymology, derivation, synonyms, location, properties, functions of Asthi Dhatu. Number of Asthi. Physiology of Asthivaha Srotas and formation of Asthi Dhatu, characteristics of Asthisara Purusha, mutual interdependence of Vata and Asthi Dhatu, manifestations of Kshaya and Vriddhi of Asthi Dhatu.	II	19	2	1
7.	Majja Dhatu : Etymology, derivation, types, location, properties, functions and Praman of Majjaa Dhatu, physiology of Majjavaha Srotas, formation of Majja Dhatu, characteristics of Majja Sara Purusha, relation of Kapha, Pitta, Rakta and Majja, manifestations of Kshaya and Vriddhi of	II		3	1

	Majja Dhatu.				
8.	Shukra Dhatu: Etymology, derivation, location, properties, functions and Praman of Shukra Dhatu, physiology of Shukraravaha Srotas and formation of Shukra Dhatu. Features of Shuddha Shukra, characteristics of Shukra-Sara Purusha, manifestations of Kshaya and Vriddhi of Shukra Dhatu.	II		3	1
9	Concept of Ashraya-Ashrayi bhava i.e. inter-relationship among Dosha, Dhatu Mala and Srotas. Applied physiology of diseases asserting saptadhatu enlisted under dhatu pradoshaj vikar.	II		1	1
10.	Ojas: Etymological derivation, definition, formation, location, properties, Praman, classification and functions of Ojas. Description of Vyadhikshamatva. Bala Vriddhikara Bhava. Classification of Bala. Etiological factors and manifestations of Ojavisramsas, Vyapat and Kshaya.	II		3	1
11.	Upadhatu: General introduction, etymological derivation and definition of the term Upadhatu. Formation, nourishment, properties, location and functions of each Upadhatu. Stanya: Characteristic features and methods of assessing Shuddha and Dushita Stanya, manifestations of Vriddhi and Kshaya of Stanya. Artava: Characteristic features of Shuddha and Dushita Artava. Differences between Raja and Artava, physiology of Artavavaha Srotas. Tvak: classification, thickness of layer and functions.	II		6	1
12.	Mala: Etymological derivation and definition of the term Mala. Aharamala: Enumeration and description of the process of formation of Aharamala. Purisha: Etymological derivation, definition, formation, properties, quantity and functions of Purisha. Physiology of Purishavaha Srotas, manifestations of Vriddhi and Kshaya of Purisha. Mutra: Etymological derivation, definition, formation, properties, quantity and functions of Mutra. Physiology of Mutravaha Srotas, physiology of urine formation in Ayurveda, manifestations of Vriddhi and Kshaya of Mutra. Sveda: Etymological derivation, definition, formation and functions of Sveda. Manifestations of Vriddhi and Kshaya of Sveda. Description of Svedvaha Srotas Dhatumala: Brief description of each type of Dhatumala.	III	23	6	2
13	Indriya vidnyan: Physiological description of Panchagyaanendriya and physiology of perception of Shabda, Sparsha, Rupa, Rasa and Gandha. Physiological description of Karmendriya.	III		1	1
14	Manas: Properties, functions and objects of Manas. Physiology of Manovaha Srotas.	III		2	1
15	Atma: Properties of Atma. difference between Paramatma and Jivatma; Characteristic features of existence of Atma in living body.	III		2	0
16	Nidra & Swapna: Nidrotpatti, types of Nidra, physiological and clinical significance of Nidra; Svapnotpatti and types of Svapna.	III		2	0

PART-B (Marks-40)					
1	Haemopoetic system: composition, functions of blood and blood cells, Haemopoiesis (stages and development of RBCs, and WBCs and platelets), composition and functions of bone marrow, structure, types and functions of haemoglobin, mechanism of blood clotting, anticoagulants, physiological basis of blood groups, plasma proteins, introduction to anaemia and jaundice.	I	18	5	2
2	Immunity: classification of immunity: Innate, acquired and artificial. Different mechanisms involved in immunity: Humoral (B-cell mediated) and T-Cell mediated immunity. Hypersensitivity.	I		2	0
3	Physiology of cardio-vascular system: Functional anatomy of cardiovascular system. Cardiac cycle. Heart sounds. Regulation of cardiac output and venous return. Physiological basis of ECG. Heart-rate and its regulation. Arterial pulse. Systemic arterial blood pressure and its control.	I		5	2
4	Muscle physiology: comparison of physiology of skeletal muscles, cardiac muscles and smooth muscles. Physiology of muscle contraction.	II	07	2	0
5	Adipose tissue: lipoproteins like VLDL, LDL and HDL triglycerides. Functions of skin, sweat glands and sebaceous glands.	II		2	1
6	Physiology of male and female reproductive systems: Description of ovulation, spermatogenesis, oogenesis, menstrual cycle.	II	15	5	2
7	Physiology of Excretion: functional anatomy of urinary tract, functions of kidney. Mechanism of formation of urine, control of micturition. Formation of faeces and mechanism of defecation.	III		4	2
8	Special Senses, Sleep and Dreams: Physiology of special senses. physiology of sleep and dreams	III		5	1

Table 3: Learning objectives (Theory) of Course AyUG-KS

PAPER I									
A3 Course outcome	B3 Learning Objective (At the end of the session, the Students should be able to)	C3 Domain/sub	D3 Must to know/ desirable to know/Nice to know	E3 Level Does/ Shows how/ Knows how/ Know	F3 T-L method	G3 Assessment	H3 Formative /summative	I3 Term	J3 Integration
Paper I (Part A) (60 Hours)									
Topic 1 – Sharir (human body) (3 hr) [Lecture: 2 hours, non-lecture: 1 hour]									
CO 1	Explain the definition and synonyms of the term <i>kriya, sharira</i> and <i>shaarira</i>	Cognitive (recall, comprehension)	Mk	K	Lecture	Written/ (MCQ, MEQ, LAQ, SAQ) Viva voce	F & S	I	
CO 2	Enlist the <i>sharira dosha</i> and <i>manasa dosha</i> and	Cognitive (recall, comprehension)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Explain mutual relationship between <i>triguna, panchmahabhuta</i> and <i>tridosha</i>	Cognitive (comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
Topic 2 – Basic Principles of Kriya Sharir (3 hr) [Lecture: 2 hours, non-lecture: 1 hour]									
CO 1	Express critical view of why <i>dosha- dhatu-mala</i> are described in specific numbers.	Cognitive (recall)	Dk	Kh	Discussion	Written	F	I	
CO 1	Explain the principle of “ <i>dosha-dhatu-mala mulam hi shariram</i> ”.	Cognitive (recall)	Mk	Kh	Lecture Discussion	Written	F & S	I	
CO 1	Discuss term homeostasis in <i>dosha-</i>	Cognitive (comprehension)	Dk	Kh	Discussion	Viva voce	F	I	

	<i>dhatu-mala.</i>								
CO 1	Explain role of <i>srotas</i> in the body.	Cognitive (comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Explain the basic concept of <i>srotas</i> and classify different <i>srotas</i> based on Rachana (morphological), <i>kriya</i> (functions) and <i>guna</i> (properties)	Cognitive (comprehension)	Mk	Kh	Lecture Discussion Flipped classroom	Written/ Viva voce	F & S	I	<i>Rachana sharir</i>
CO 1	Describe the significance of the knowledge of <i>srotas</i> in <i>kriya sharira</i>	Cognitive (comprehension)	Mk	Kh	Discussion	Written/ Viva voce	F & S	I	
CO 1	Compare <i>mula sthana</i> of <i>srotas</i> described in <i>samhitas</i> in view of <i>kriya sharir</i> and contemporary medical science	Cognitive (application)	Dk	Kh	Model Discussion Tutorial Assignment	Viva voce	F & S	I	
CO 1	Find out similarities and differences between <i>srotas</i> and system of contemporary science.	Cognitive (application)	Nk	Kh	Discussion Self-learning Think-Pair-Share	Short notes	F	I	
CO 1	Document observations on correlation of anyone environmental global change and physiological variation as per Ayurved, contemporary sciences.	Cognitive (application)	Nk	Kh	Discussion Self-learning Think-Pair-Share	Short notes	F	I	
CO 1	Recognize the contribution of Ayurveda in the formation of four basic principles of Bioethics mentioned in contemporary science.	Cognitive (recall) (comprehension)	Nk	Kh	Lecture Discussion	Written	F	I	
Topic 3 – Tridosha (Three humors of the body) (3 hr) [Lecture: 3 hours, non-lecture: 0 hours]									
CO 1	Describe <i>utpatti</i>	Cognitive	Mk	K	Lecture	Written/	F & S	I	

	(<i>prasad & malabhuta</i>), locations of <i>dosha</i> .	(recall)				Viva voce			
CO 1	State biological rhythms or circadian cycle of <i>tridosha</i> based on day-night-age-season food intake and relation to the environment	Cognitive (comprehension)	Mk	Kh	Lecture discussion Seminar	Written/ Viva voce	F & S	I	
CO 1	Explain the applied role of <i>dosha</i> in maintaining health and State of equilibrium and recognize the role of <i>dosha</i> in the formation of <i>prakriti</i> of an individual	Cognitive (comprehension)	Mk	Kh	Lecture discussion Seminar	Written/ Viva voce	F & S	I	
CO 1	State importance of <i>dosha</i> in lifestyle management and mutual relationship between <i>ritu-kala-dosha-rasa-guna</i>	Cognitive (application)	Nk	Kh	Discussion PBL	Viva voce	S	I	
CO 1	Interpret <i>gurvadi guna</i> of <i>dosha</i> in term of applied physiology and clinical aspect in different chapters of Charak.	Cognitive (application)	Nk	Kh	Discussion PBL/CBD	Written	F	I	<i>Padartha Vijnana. Kayachikitsa</i>
CO 1	Interpret <i>sama & niram</i> lakshana of <i>dosha</i>	Cognitive (comprehension)	Dk	Kh	Discussion	Written	F	I	
CO 1	Discuss the evidences of functional significance of <i>vata</i> , <i>pitta</i> and <i>kapha</i> in perspective of nervous, endocrine, immune or any other system.	Cognitive (application)	Nk	Kh	Discussion Think-Pair-Share	Self-assessment	SA	I	
CO 1	Discuss how to examine <i>vrudhhi-kshaya</i> of <i>dosha</i>	Cognitive (comprehension)	Dk	Kh	Discussion PBL	Viva voce	S	I	
CO 1	State materialism and	Cognitive	Mk	Kh	Discussion	Viva voce	F	I	

	immaterialism of tridosha	(comprehension)							
Topic 4 – Vata dosha (8 hr) [Lecture: 6 hours, non-lecture: 2 hours]									
CO 1	Define the <i>vyutpatti</i> and <i>nirukti</i> of <i>vata</i> .	Cognitive (Recall)	Mk	K	Lecture	Written/ Viva voce	F & S	I	
CO 1	Describe <i>guna</i> and general locations of <i>vata dosha</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe general properties & functions of <i>vata dosha</i> and demonstrate the normal <i>guan, karma</i> of <i>vata dosha</i> in a healthy person.	Cognitive (Comprehension)	Mk	Kh/Sh	Lecture Discussion	Written/ Viva voce	F & S	I	<i>Rognidan Vikriti Vidhyan</i>
CO 1	Enlist five types of <i>vata</i> and describe <i>prana, udana vata</i> with their specific locations, properties and functions.	Cognitive (Recall & Comprehension)	Mk	Kh	Lecture Confusion technique Demonstration Chart, Model	Written/ Viva voce Skill assessment	F & S	I	
CO 1	Explain the term <i>nishwas, ucchwas, shwasan</i> & describe the role of <i>prana vayu & udana vayu</i> in <i>shwasan prakriya</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture	Written/ Viva voce	F & S	I	
CO 1	Describe <i>shwasan prakriya</i> according to <i>sharangadhar</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Model, Video	Written/ Viva voce	F & S	I	
CO 1	Describe clinical importance of classification of <i>swara</i> and <i>vyanjana</i> according to their <i>uccharana sthan</i> .	Cognitive (Application)	Nk	Sh	Demonstration Discussion Assignment PBL/CBL	Self- assessment	SA	I	Sanskrit
CO 1	Describe the formation and articulation of <i>shabda</i> (words) and explain the bio-physiology of	Cognitive (Comprehension)	Dk	Kh	Lecture A/V aids.	Written/ Viva voce	F & S	I	

	induction of <i>vaak</i> and role of <i>udaan vaayu</i> in it.								
CO 1	Explain role of pranayama, <i>puraka</i> , <i>rechaka</i> and <i>kumbhaka</i> in <i>samyaka shwasana</i> , <i>swara/ ghosha utpatti</i>	Cognitive (Analysis)	Nk	Sh	Demonstration Discussion Assignment PBL/CBL	Self-assessment	SA	I	<i>Swasthavrutta</i>
CO 1	Describe <i>samana</i> with their specific locations, properties and functions.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Confusion technique Demonstration Chart, Model	Written/ Viva voce	F & S	I	
CO 1	Describe <i>vyana vata</i> with their specific locations, properties and functions.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Confusion technique Demonstration Chart, Model	Written/ Viva voce	F & S	I	
CO 1	Describe role of <i>vyana vayu & samana vayu</i> in the process of <i>rasa-samvahanana</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Seminar	Written/ Viva voce	F & S	I	
CO 1	Review the contribution of <i>vyana and saman vayu</i> in the process of cardiac circulation.	Cognitive (Comprehension)	Dk	K	Discussion	Written/ Viva voce	F	I	
CO 1	Interprete microbiota, gut brain axis for understanding enteric nervous system in perspective of <i>vata, saman vayu</i> .	Cognitive (Comprehension)	Nk	K	Discussion	Self-assessment	SA	I	
CO 1	Describe <i>Apana vata</i> with their specific locations, properties and functions.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Confusion technique Demonstration	Written/ Viva voce	F & S	I	

CO 1	Document & discuss your observations on correlation of functions of <i>apana vayu</i> with which type of nervous system & why?	Cognitive (Comprehension)	Nk	K	Discussion	Self-assessment	SA	I	
CO 1	Illustrate gati (directions) of types of vata by using lebel diagramme.	Cognitive (analysis)	Dk	Kh	Illustration	Self-assessment Peer evaluation.	SA	I	
CO3	Explain difference between <i>kshaya</i> & <i>vridhhi lakshana</i> of <i>vata Dosha</i>	Cognitive (Comprehension)	MK	Kh	Chalk-board Presentation Symposium Discussion	Written/ Viva voce	F & S	I	
CO5	Interpret which type of <i>vata dosha</i> gets vitiated and in which clinical condition the use of proper <i>aahar dravya</i> is prevalent as per <i>kshaya, vridhhi of vata dosha</i> .	Cognitive (Application)	Dk	Sh	Demonstration Discussion PBL	Written/ Viva voce	F & S	I	
CO 1	Recite and to explain the important verses of <i>vata dosha</i> . (<i>ex-sthana, karma, types, vridhhi and kshaya</i>)	Cognitive (Recall)	Dk	Sh	Discussion Recitation	Written/ Viva voce	F & S	I	Sanskrit Samhita
Topic 5 – Pitta dosha (6 hr) [Lecture: 5 hours, non-lecture: 1 hour]									
CO 1	Define the <i>vyutpatti</i> and <i>nirukti</i> of <i>pitta</i> .	Cognitive (Recall)	Mk	Kh	Lecture	Written/ Viva voce	F & S	II	
CO 1	Describe <i>guna</i> and general locations of <i>pitta dosha</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Demonstration	Written/ Viva voce Skill assessment	F & S	II	
CO 1	Describe general	Cognitive (Recall)	Mk	Kh	Lecture	Written/	F & S	II	<i>Rognidan</i>

	properties & functions of <i>pitta dosha</i> and explain the normal <i>guna, karma of pitta dosha</i> in a healthy person.	& Comprehension)			Discussion Seminar	Viva voce			<i>Vikriti Vidnyan</i>
CO 1	Enlist five types of <i>pitta dosha</i> and describe <i>pachaka</i> with their specific locations, properties and functions.	Cognitive Recall	Mk	Kh	Lecture Discussion Demonstration	Written/ Viva voce	F & S	II	
CO 1	Record your opinions about functions of pachak pitta and digestive enzymes separately.	Cognitive (Comprehension)	Nk	Kh	Group discussion	Self-assessment	SA	II	
CO 1	Describe <i>ranjaka</i> pitta with their specific locations, properties and functions.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Demonstration	Written/ Viva voce	F & S	II	
CO 1	Describe role of <i>ranjaka</i> pitta in <i>rasaranjan</i> process as per different <i>aacharyas</i> .	Cognitive (Comprehension)	Dk	Kh	Lecture	Written/ Viva voce	F & S	II	
CO 1	Interprete stages of erythroipoiesis and role of intrinsic factor, vit. B ₁₂ etc in hemopoiesis.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Seminar	Written/ Viva voce	F & S	II	
CO 1	Describe <i>alochaka, bhranjaka, sadhaka</i> pitta with their specific locations, properties and functions.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Demonstration	Written/ Viva voce	F & S	II	
CO 1	Discuss rhodopsin and iodopsin along with <i>alochaka pitta</i> and note down	Cognitive (Recall)	Nk	Kh	Self study	Self-assessment	SA	II	

CO 1	Elaborate the functions of bhrajaka pitta in term physiology.	Cognitive (Comprehension)	Nk	Kh	Self study	Self-assessment	SA	II	
CO 1	Describe the role of <i>sadhaka</i> pitta in <i>sadhana</i> , concentration and observe changes upon heart rate and respiratory rate	Attitude (Imitation)	Nk	Sh	Discussion Demonstration	Self-assessment	SA	II	
CO 1	Find out similarities and differences between fuctions of sadhaka pitta and neurotransmitter.	Cognitive (Analysis)	Nk	Kh	Self study	Self-assessment	SA	II	
CO 1	Explain difference between <i>kshaya</i> & <i>vridhhi lakshana</i> of <i>pitta Dosha</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 5	Interpret which type of <i>pitta dosha</i> gets vitiated and in which clinical condition the use of proper <i>aahar dravya</i> is prevalent as per <i>kshaya, vridhhi</i> of <i>pitta dosha</i> .	Cognitive (Application)	Dk	Sh	Demonstration Discussion PBL	Written/ Viva voce	F & S	II	<i>Swasthavrutta</i>
CO 1	Distinguish the similarities & differences between <i>agni</i> and <i>pitta</i> in terms of their <i>guna</i> with examples in compendia.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion PBL Seminar	Written/ Viva voce	S	II	
CO 1	Make inferences and find evidences / examples in daily regimen to support generalization of <i>agni</i> & <i>pitta</i> statement.	Cognitive (Analysis)	Nk	Sh	Demonstration Discussion Assignment PBL/CBL	Self-assessment	SA	II	
CO 1	Recite and explain the important verses of <i>pitta dosha</i> . (ex-	Cognitive (Recall)	Dk	Kh	Discussion Recitation	Written/ Viva voce	F & S	II	

	<i>sthana, karma, types, vridhhi and kshaya</i>)								
Topic 6 – Kapha dosha (5 hr) [Lecture: 4 hours, non-lecture: 1 hour]									
CO 1	Define the <i>vyutpatti</i> and <i>nirukti</i> of <i>kapha dosha</i> .	Cognitive (Recall Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe general properties & functions of <i>kapha dosha</i> and demonstrate the normal <i>guan, karma</i> of <i>kapha dosha</i> in a healthy person.	Cognitive (Recall) (Application)	Mk	Kh	Lecture Discussion Demonstration	Written/ Viva voce Skill assessment	F & S	II	
CO 1	Enlist five types of <i>kapha dosha</i> & describe <i>bodhaka kapha kledaka, tarpaka</i> with their specific locations, properties and functions.	Cognitive (Recall)	Mk	Knows	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Identify the role of saliva in taste perception and also in other way.	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe role of <i>kledaka kapha</i> in lubricating and protective properties of mucus.	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the role of <i>tarpaka kapha</i> in protects the sensory organs.	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe <i>avalambaka, sleshaka</i> with their specific locations, properties and functions.	Cognitive (Recall)	Mk	Knows	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the role of	Cognitive	Dk	Kh	Lecture	Written/	F & S	II	

	<i>avalambaka</i> in heart protection and <i>sleshaka kapha</i> in arthritis.	(Comprehension)			Discussion	Viva voce			
CO 1	Explain difference between <i>kshaya</i> & <i>vridhhi lakshana</i> of <i>kapha Dosha</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	State importance of <i>prakrit shleshmik bala / veerya</i> & <i>vikrit shleshmik mala</i> & find out significance of above cognitive in applied aspect	Cognitive (Application)	Nk	Kh	Lecture Discussion	Self-assessment	SA	II	<i>Kayachikitsa</i>
CO 5	Interpret which type of <i>kapha dosha</i> gets vitiated and in which clinical condition the use of proper <i>aahar dravya</i> is prevalent as per <i>kshaya, vridhhi of kapha dosha</i> .	Cognitive (Application)	Nk	Sh	Demonstration Discussion PBL	Viva voce	F & S	II	<i>Swasthavrutta</i>
CO 1	Recite and explain the important verses of <i>kapha dosha</i> . (ex- <i>sthana, karma, vridhhi and kshaya</i>)	Cognitive (Recall & Comprehension)	Dk	Sh	Discussion Recitation	Written/ Viva voce	F & S	II	
CO 1	Describe neural & chemical communication system of body	Cognitive (Comprehension)	Nk	Kh	Self study	Self-assessment	SA	II	
Topic 7 – Dosha Vridhhi-Kshaya (Hyper and hypo state of dosha) (2 hr) [Lecture: 1 hour, non-lecture: 1 hour]									
CO 1	Describe etiological factors causing <i>tridosha vridhhi</i> & <i>kshaya</i> on the basis of <i>dravya, guna, karma, aahaar & vihara</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	<i>Dravyaguna</i>
CO 1	Describe, observe and interpret individual	Cognitive (Comprehension)	Nk	Sh	Demonstration Discussion	Self-assessment	SA	II	

	causes and symptoms of <i>panchavidha vataprakopa</i> . (<i>Ashtanga Hridaya nidana sthana</i> 16)	Application)			PBL				
CO 1	Describe <i>vridhhi-kshaya lakshana</i> of <i>vata dosha</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe <i>vridhhi & kshaya lakshana</i> of <i>pitta</i> and <i>kapha dosha</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Enumerate the <i>nanatmaj vyadhi</i> of <i>tridosha</i>	Cognitive (Recall)	Nk	K	Lecture	Self-assessment	SA	II	
Topic 8 – Kriyakala (Treatment as per prevalent kala) (2 hr) [Lecture: 1 hour, non-lecture: 1 hour]									
CO 1	Explain the Concept of <i>kriyakala</i> & enumerate stages of <i>kriyakala</i> .	Cognitive (Recall) (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	<i>Rognidan Vikriti Vidnyan</i>
CO 1	Describe the stages <i>sanchaya, prakopa, prasara</i> of <i>kriyakala</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the stages <i>sthansanshraya, vyaktavastha & bhedavastha</i> of <i>kriyakala</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the applied physiology of diseases produced due the vitiation of <i>vata, pitta</i> and <i>kapha</i> .	Cognitive (Comprehension)	Nk	Sh	Lecture Discussion	Self-assessment	SA	II	
CO 1	Describe ideas given in the <i>shat-kriyakala</i> about preventive measures	Cognitive (Comprehension)	Nk	Kh	Group discussion	Self-assessment	SA	II	
Topic 9 – Prakriti (Deha- Prakriti, Manasa- Prakriti) (Body constitution, personality, temperament of individuals) (10 hr) [Lecture: 7 hours, non-lecture: 3 hours]									
CO 1	Define the term <i>prakriti</i> and describe etymology & different	Cognitive (recall)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	II	

	meanings of the term <i>prakriti</i> .								
CO 1	Describe the role of different <i>matrijadi bhava</i> (genetic, intra-uterine and extra-uterine factors) influencing <i>prakriti</i> according to <i>Charaka and Sushruta</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Symposium	Written/ Viva voce	F & S	II	
CO 1	Describe the classification of different <i>prakriti</i> according to various Samhitas	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Enumerate types of <i>deha prakriti</i> and classify <i>deha prakriti</i> into <i>eka-doshaja, dvanvaja, samadoshaja</i> .	Cognitive (Recall)	Mk	Kh	Lecture Discussion Model Demonstration	Written/ Viva voce	F & S	II	
CO 1	Describe the <i>guna</i> (attributes) of <i>vata prakriti</i> according to <i>Charaka Samhita</i>	Cognitive (Comprehension)	Mk	Sh	Lecture Discussion Model Demonstration	Written/ Viva voce	F & S	II	
CO 1	Describe the <i>guna</i> (attributes) of <i>pitta prakriti</i> according to <i>Charaka Samhita</i>	Cognitive (Comprehension)	Mk	Sh	Discussion Role play real life experience	Written/ Viva voce	F & S	II	
CO 1	Describe the <i>guna</i> (attributes) of <i>kapha prakriti</i> according to <i>Charaka Samhita</i>	Cognitive (Comprehension)	Mk	Sh	Lecture Discussion video show Simulation	Written/ Viva voce	F & S	II	
CO 1	Describe <i>guna</i> of <i>vata, pitta & kapha prakriti</i> according to Vagbhata (abhiruchi) & <i>Sushruta samhita (anukatva)</i>	Cognitive (Comprehension)	Mk	Sh	Discussion Model Demonstration Team project work, Tutorial	Written/ Viva voce	F & S	II	
CO 1	Describe the <i>guna</i> (attributes) of <i>vata, pitta & kapha prakriti</i> according to	Cognitive (Comprehension)	Nk	Sh	Discussion	SA	SA	II	

	<i>Sharangadhara Samhita</i>								
CO 1	Describe the relationship between individual <i>prakriti</i> & <i>agni, koshta</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe classification of <i>bhautik prakriti</i> and characteristic features of the individuals belonging to each kind of <i>bhautik prakriti</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe classification of <i>manas prakriti</i> and characteristic features of the <i>satvic prakriti</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the characteristic features of <i>rajasic & tamasic manas prakriti</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe classification of and characteristic features of the individuals belonging to each kind of <i>jatyadi-prakriti</i>	<i>Cognitive (Comprehension)</i>	<i>Mk</i>	<i>Kh</i>	<i>Lecture Discussion</i>	<i>Written</i>	<i>F & S</i>	II	
CO 1	Similarities and difference between the <i>sharirik & manas prakriti</i> descriptions given in various Samhitas.	Cognitive (Comprehension)	Dk	Kh	Discussion Team project work	Written	F	II	<i>Kayachikitsa</i>
CO 1	Significance of the Cognitive of <i>prakriti</i> in clinical aspect and <i>pathya-apathya kalpana</i> in <i>ahara</i> and <i>vihara</i> of each type of <i>prakriti</i> .	Cognitive (Comprehension)	Mk	Kh	Discussion Self-learning Buzz group	Written Role play	F & S	II	
CO 1	Appreciate the use of various validated tools for assessing	Cognitive (Application)	Mk	Sh	Discussion Tutorial, Demonstration	Written/ Viva voce	F & S	II	

	Ayurvedic concept of human constitution (prakriti) (software/questionnaire) to evaluate <i>prakriti</i> - Ex-CCRAS portal								
CO 1	Describe the relevance of <i>desha-kala-ritu-vaya-ahara-vihara-satmya</i> , <i>aushadha</i> of parents especially of mother on <i>prakriti</i> of individual.	Cognitive (Application/Analysis)	Dk	Kh	Tutorial, Discussion	Viva voce Seli-assessment	SA	II	<i>Kayachikitsa</i>
CO 1	Appreciate the application of recent advances in the domain of research related to <i>prakriti</i> (genetic, physiological basis)	Cognitive (Application/Analysis)	Nk	Kh	Discussion	Seli-assessment	SA	II	
CO 1	Recite and explain the important verses of <i>vata</i> , <i>pitta</i> & <i>kapha doshaja prakriti</i> .	Cognitive (Recall & Comprehension)	Dk	Kh	Discussion Recitation	Written/ Viva voce	F & S	II	
CO 1	Observe distinguish features of individuals of three contrasting <i>prakriti</i> types <i>vata</i> , <i>pitta</i> and <i>kapha</i> by IGIB. Link: https://doi.org/10.1186/1479-5876-6-48	Cognitive (Application)	Nk	Sh	Team project work	Team assessment	TA	II	
CO 1	Observe standardized <i>prakriti</i> assessment tool by CCRAS. Link: doi/10.5005/jp-journals-10064-0019	Cognitive (Application)	Nk	Sh	Team project work	Team assessment	TA	II	
CO 1	Compare human constitution (<i>prakriti</i>) & genomic	Cognitive (Comprehension)	Nk	Kh	Group discussion	Self-assessment	SA	II	
CO 1	Record the known physiological variation	Cognitive (Application)	Dk	Kh	Real life experience	Demonstration	SA	II	

	of your friends in different <i>rutu</i> as per different <i>prakriti</i> .				Role play				
CO 1	Discuss correlation of genotype and phenotype with <i>prakriti</i> .	Cognitive (Comprehension)	Nk	Kh	Group discussion	Self-assessment	SA	II	
CO 1	Trace interrelationship between aging and <i>prakriti</i>	Cognitive (Comprehension)	Nk	Kh	Discussion	Self-assessment	SA	II	
CO 1	Point out hematological difference as per different <i>prakriti</i> .	Cognitive (Analysis)	Nk	Kh	Survey	Self-assessment	SA	II	
CO 1	Discuss <i>manas prakruti</i> and personality.	Cognitive (Comprehension)	Dk	Kh	Role pay	Self-assessment	SA	II	
CO 1	Role of <i>prakriti</i> (Ayurgenomics) in the concept of personalised medicine	Cognitive (Comprehension)	Nk	Kh	Group discussion Seminar	Self-assessment	SA	II	
CO 1	Explore thes Immunophenotyping & human dosha <i>prakriti</i> .	Cognitive (Comprehension)	Nk	Kh	Online material	Self-assessment	SA	II	
Topic 10 – Ahara (Diet and nutrition in Ayurveda) (4 hr) [Lecture: 3 hours, non-lecture: 1 hour]									
CO 1	Describe the <i>Nirukti</i> (etymology)& <i>paribhasa</i> (definition) of <i>ahar</i> .	Cognitive (Recall)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the <i>Bheda</i> (classification) and <i>upayogita</i> (importance) of <i>ahara</i> .	Cognitive (Recall)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Define, enlist and describe- the types of <i>ahara</i> in detail with examples	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Tutorial	Written/ Viva voce	F & S	III	

CO 1	Define, enlist and describe <i>ashta ahara-vidhi-viseshayatana</i> (8 factors to be considered while preparing and processing the food) in detail with examples	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Seminar	Written/ Viva voce	F & S	III	<i>Swathavritta</i>
CO 1	Describe <i>ahara vidhi vidhana</i> (rules for consuming the food) in detail with examples.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Explains the role of <i>ahara vidhi vidhana</i> in the context of present-day lifestyle, cooking habits and eating behaviour.	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion Real life experience Evidance based learning	Written/ Viva voce	F & S	III	
CO 1	Define, enlist and describe <i>ahara parinamkara bhava</i> (factors responsible for proper digestion) and the importance of each of these factors in the process of digestion	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Explain the concept of <i>viruddha ahara</i> (incompatible diet) and its relevance in present-day food processing methods and dietary consumption behaviour in individuals.	Cognitive (application)	Dk	Sh	Lecture Discussion Observation	Written/ Viva voce	SA	III	<i>Swathavritta</i>
CO 1	Explain the role of <i>ahara</i> in today's aspect related to <i>anupana</i> habits etc.	Cognitive (application)	Nk	Sh	Lecture Discussion	Self assessment	SA	III	
CO 1	Explain the role in today's lifestyle of food, compatible food, the proper time for	Cognitive (application)	Nk	Sh	Lecture Discussion Assignment	Self-notes	SA	III	

	food taking, practice regarding food intake etc. in individual's health.								
CO 1	Explain dietary guidelines, how to eat food in Ayurvedic view.	Cognitive (application)	Nk	Kh	Lecture Discussion	Self assessment	SA	III	
Topic 11 – Agni (The digestive fire of the body) (5 hr) [Lecture: 4 hours, non-lecture: 1 hour]									
CO 1	Describe different meanings of <i>agni</i> in different contexts and define <i>agni</i> in the context of <i>kriya sharir</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	State the importance of <i>agni</i> in maintaining the different aspects of human physiology	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Enumerate and explain the different synonyms of <i>agni</i> regarding <i>kriya sharir</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Enumerate and define various classifications of <i>agni</i> concerning their locations and functions in the body	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the physiological roles of <i>jatharagni</i> , <i>bhutagni</i> and <i>dhatvagni</i> and explain the differences and similarities between the three.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	<i>Kayachikitsa</i>
CO 1	Classify and explain the features of four functional / abnormal states of <i>jatharagni</i> : <i>samagni</i> , <i>vishamagni</i> , <i>mandagni</i> & <i>tikshnagni</i> and explain evaluation process of <i>jarana-</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	<i>Rognidan</i>

	<i>shakti.</i>								
CO 1	Enumerate the factors affecting the normal functioning of Agni and the symptoms of improper functioning of <i>agni</i> seen in certain clinical conditions	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Viva voce	F	III	
CO 1	Enumerate and discuss different entities in the body that can represent different forms of <i>agni</i> from the contemporary physiology and biochemistry (hormones, enzymes etc) point of view	Cognitive (Comprehension)	Nk	Kh	Lecture Discussion	Self assessment Debate	SA	III	
CO 1	Record the opinions among your friends on the concept of free radicals & antioxidant	Cognitive (Application)	Nk	Sh	Team project work	Team assessment	TA	III	
CO 1	Identify digestive and metabolic functions of <i>Agni</i> & its clinical importance.	Cognitive (Application)	Nk	Sh	Group discussion	Self Assessment	SA	III	
CO 1	Distinguish the similarities & differences between <i>agni</i> and <i>pitta</i> in terms of their <i>guna</i> with examples in compendia. (mentioned in <i>pitta</i> also)	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion PBL	Written/ Viva voce	S	III	
Topic-12. Annapachana / Aahara-paka (Digestion and metabolism in Ayurveda) (9 hr) [Lecture: 7 hours, non-lecture: 2 hours]									
CO 1	Describe the <i>annavaha srotas</i> along with its <i>mula sthana</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Enumerate and describe different organs of <i>annavaha</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	

	<i>srotas</i> and their important functions. according to Ayurveda and contemporary physiology								
CO 1	Describe three stages of digestion: <i>madhura, amla</i> and <i>katu avasthapaka</i> in detail	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Tutorial	Written/ Viva voce	F & S	III	
CO 1	Describe the process of <i>udeerana</i> (increase/ release) of <i>vata, pitta, kapha</i> during <i>avasthapaka</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the formation of <i>prakrit</i> and <i>vaikrit dosha</i> (<i>prasadbhuta, malabhuta dosha</i>) and their role.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	<i>Rognidan</i>
CO 1	Describe the definition of <i>vipaka</i> (<i>nisthapaka</i>) and classification of <i>vipaka</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe how to identify <i>vipak</i> of <i>aahar</i> as per their effect on the body.	Cognitive (application)	Dk	Sh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the similarities and differences between <i>avasthapaka</i> and <i>nisthapaka</i>	Cognitive (Comprehension)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	III	

CO 1	Explain the role of different sub-types of <i>dosha</i> in the process of digestion: <i>bodhaka kapha, prana vayu, kledaka kapha, samana vayu, pachaka pitta, apana vayu</i> etc.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
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CO 1	Describe the process of separation of <i>saara</i> and <i>kitta</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	State the application of the theory of <i>pilu-paka</i> and <i>pithara paka</i> in <i>aharapaka</i>	Cognitive (Comprehension)	Nk	Kh	Lecture Discussion	Self-assessment	SA	III	
CO 1	Explain the role of <i>grahani</i> & <i>pittadhara kala</i> & describe possible relation between <i>pittadhara</i> and <i>majjadhara kala</i> .	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	State the importance of <i>pachaka pitta</i> and <i>jatharagni</i> in the process of digestion	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Explain the role of <i>bhutagni</i> and <i>dhatvagni</i> in <i>ahara parinaman</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the process of formation of <i>ahara-rasa</i> and absorption of <i>sara bhaga</i> / <i>anna-veerya</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Draw parallels between the different types of <i>agni</i> and various digestive enzymes and hormones	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Define <i>ahara gati</i> , <i>abhyavaharana shakti</i> , <i>annagrahana</i> , <i>pachana</i> , <i>vivechana</i> , <i>munchana</i> and <i>jaranashakti</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Discuss applied clinical aspect of <i>annavaha srotas</i> : <i>arochaka</i> , <i>ajirna</i> , <i>atisara</i> , <i>grahani</i> , <i>chardi</i> , <i>parinama shula</i> etc	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Viva voce CBD	F & S	III	

CO 1	Define different meanings of the term <i>koshtha</i> and explain the term in the context of <i>kriya sharira</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Enumerate the different types of <i>koshtha</i> according to the predominance of <i>dosha</i> (<i>krura-mridu and madhya</i>)	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	<i>Panchakarma</i>
CO 1	State clinical significance of <i>koshtha</i> and the process of evaluating <i>koshtha</i> in an individual.	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce DOPS	F & S	III	
Part B (40 Hours) –									
Topic 1 - Physiology Homeostasis (6 hr) [Lecture: 5 hours, non-lecture: 1 hour]									
CO 1	Define homeostasis and describe mechanisms of maintenance of homeostasis.	Cognitive (Recall/ Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Distinguish between the shell temperature and core temperature	Cognitive (Recall/ Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Define the terms Cell death, Cell degeneration, Cell aging. Describe animal tissue.	Cognitive (Recall/ Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe mechanism of positive and negative feedback system with at least two examples.	Cognitive (Recall/ Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the structure and function of cell, cell membrane, cytoplasmic	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	

	organelles, genetic material (DNA & RNA.)								
CO 1	Explain the process of DNA replication & inhibitors of replication.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the acid-base balance, water and electrolyte balance.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the concept of pH & buffer systems in the body and Na-K pump	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe and discuss transport mechanisms across cell membranes. (Active & facilitated)	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe and discuss the molecular basis of resting membrane potential and action potential	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
Topic 2 - Physiology of respiratory system: (7 hr) [Lecture: 5 hours, non-lecture: 2 hours]									
CO 1	Describe divisions of the respiratory system based on its functions.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe pulmonary circulation.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the mechanics of normal respiration, pressure changes during ventilation.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the lung volume and capacities, compliance, diffusion of lungs	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe and discuss the exchange and transport of gases - Oxygen and Carbon dioxide	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Seminar	Written/ Viva voce	F & S	I	

CO 1	Describe the neural and chemical control of respiration.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe physiological situations that affect respiration and discuss artificial respiration, dyspnoea, asphyxia, hypoxia, cynosis.	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe Haldane effect & Kussmaul breathing.	Cognitive (Comprehension)	Nk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe basic of pulmonary function tests.	Cognitive (Comprehension)	Nk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
Topic 3 - Physiology of Gastrointestinal system (9 hr) [Lecture: 7 hours, non-lecture: 2 hours]									
CO 1	Describe enzyme and its fuctions in metabolism	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe functional anatomy and physiology of the digestive system	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the functions of salivary glands, stomach, liver, gall bladder pancreas, small intestine, large intestine in the process of digestion and absorption.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the mechanism of secretion, composition, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe GIT movements deglutition, peristalsis, defecation and control	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the major components of food, the process of digestion and	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Seminar	Written/ Viva voce	F & S	II	

	metabolism of proteins, fats and carbohydrates								
CO 1	Describe the physiological role of vitamins	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the Gut-Brain Axis and enteric nervous system, and its function	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Discuss the physiology aspects of gastro-oesophageal reflux disease, vomiting, diarrhoea, constipation	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
Topic 4 - Physiology of Nervous System (10 hr) [Lecture: 7 hours, non-lecture: 3 hours]									
CO 1	Describe organization of nervous system.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the mechanism of propagation of nerve impulses.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the functions & properties of synapse, reflex, receptors	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the functional anatomy of the central nervous system (CNS) and peripheral nervous system (PNS)	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Seminar	Written/ Viva voce	F & S	III	
CO 1	Describe the physiology of autonomous nervous system (ANS)	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the physiology of sensory (general sensations) and motor nervous system	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe and discuss spinal cord, its functions, lesion & sensory disturbances	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe and discuss functions of the cerebral cortex, basal ganglia,	Cognitive (Comprehension)	Nk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	

	thalamus, hypothalamus cerebellum, mid brain, pons and medulla oblongata.								
CO 1	Describe and discuss the physiological basis of intelligence, memory, learning and motivation.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the physiology of cranial nerves	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe physiology of speech and articulation.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe physiology of temperature regulation.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the physiology of pain	Cognitive (Comprehension)	Nk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
Topic 5 - Physiology of Endocrine glands (8 hr) [Lecture: 6 hours, non-lecture: 2 hours]									
CO 1	Enlists and describe hormones & endocrine glands based on synthesis, secretion, transport, physiological actions, regulation.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe hormones secreted by anterior & posterior pituitary gland, their functions, disorders of pituitary gland (hyper & hypo activity)	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe hormones secreted by the Thyroid gland, their functions & disorders of Thyroid and parathyroid gland (hyper and hypoactivity)	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Seminar	Written/ Viva voce	F & S	III	
CO 1	Describe hormones secreted by Pancreas,	Cognitive (Comprehension)	Nk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	

	their functions & disorders of Pancreas (hyper and hypoactivity)								
CO 1	Describe hormones secreted by Adrenal cortex gland, their functions & disorders of Adrenal cortex gland (hyper and hypoactivity)	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe hormones secreted by Adrenal medulla gland, their functions & disorders of Adrenal medulla (hyper and hypoactivity)	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Enlist other Glands and their functions	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the synthesis and functions of local hormones	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
PAPER II									
A3 Course outcome	B3 Learning Objective (At the end of the session, the students should be able to)	C3 Domain/sub	D3 Must to know/ desirable to know/Nice to know	E3 Level Does/ Shows how/ Knows how/ Know	F3 T-L method	G3 Assessment	H3 Formative /summative	I3 Term	J3 Integration
AyGU-KS									
Paper II (60 Hours)									
Topic-1. Introduction to <i>Dhatu</i> (3 hr) [Lecture: 2 hours, non-lecture: 1 hour]									
CO 1	Explain the etymology, derivation, definition, synonyms and general	Cognitive (Recall)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	<i>Sanskrit Samhita/</i>

	introduction of the term <i>dhatu</i> .									<i>Rognidan Vikriti Vidnyan</i>
CO 1	Explain the difference between <i>dhatu</i> and <i>upadhatu</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I		
CO 1	Explain different theories related to <i>dhatuposhana Nyaya</i> (nourishment of different <i>dhatu</i> s).	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Seminar	Written / Viva voce	F & S	I		
CO 1	Explain the applicability of <i>nyaya</i> in the different physiological mechanisms.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Jigsaw	Written/ Viva voce	F & S	I		
CO 1	Describe <i>utpatti & poshana</i> of <i>dhatu</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I		
CO 1	Compile various terminologies related to <i>dhatu gati</i> and <i>dhatu poshana</i>	Cognitive (Comprehension)	Dk	Sh	Assignment Tutorial	Self- assessment	SA	I		
CO 1	Mention your opinion about <i>nyaya</i> concept on the basis of different metabolic pathways, transformation, transport of substances through cell membrane.	Cognitive (Application)	Nk	Kh	Group discussion Buzz group	Self- assessment	SA	I		
CO 1	Discuss theory of tissues formation and differentiation in context with physiological changes of aging.	Cognitive (Application)	Nk	Kh	Group discussion Homework based assignment	Self- assessment	SA	I		
CO 1	Discuss stem cells along with concepts of regeneration in Ayurveda	Cognitive (Recall/ Comprehension)	Nk	Kh	Lecture Online teaching aids	self assessment	SA	I		
CO 1	Study Ayurvedic aspect of <i>dhatu sarata</i> and its application	Cognitive (Application)	Nk	Kh	Group discussion Seminar	Self- assessment	SA	I		
	Topic-2. Rasa Dhatu (5 hr) [Lecture: 4 hours, non-lecture: 1 hour]									

CO 1	Explain the etymology, derivation, location, properties, functions and <i>pramana</i> of <i>rasa-dhatu</i> . <i>panchabhautikatva</i> of <i>rasa dhatu</i> .	Cognitive (Recall)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the functions of <i>rasavaha srotas</i> & <i>mula</i> of <i>rasavaha srotas</i> .	Cognitive (Recall)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the process of formation of <i>rasa dhatu</i> from <i>aahara rasa</i> , and circulation of <i>rasa-rakta</i> (<i>rasa-rakta samvahana</i>)	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe <i>kshaya-vriddhi</i> & <i>rasapradoshaja vikara</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Assignment	Written/ Viva voce	F & S	I	
CO 1	Description of functioning of <i>hridaya</i> and physiological significance of <i>hridaya</i> .	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion Flipped classroom	Written/ Viva voce	F & S	I	
CO 1	Description of <i>sira</i> , <i>dhamani</i> and <i>srotas</i>	Cognitive (Comprehension)	Nk	Kh	Discussion Video show	Written/ Viva voce	F & S	I	
CO 1	Enumerate <i>ashtavidha sara</i> (8 types of <i>sara</i>), and describe the features of individuals belonging to <i>tvak-saara purusha</i> .	Cognitive (Recall)	Mk	K	Lecture, Role play, real life experience, Discussion Brainstorming	Written/ Viva voce	F & S	I	
Topic-3. Rakta Dhatu (4 hr) [Lecture: 3 hours, non-lecture: 1 hour]									
CO 1	Explain the etymology, derivation, synonyms, location, properties, functions and <i>pramana</i> of <i>rakta dhatu</i> & explain the <i>panchabhautikatva</i> of <i>rakta dhatu</i> ,	Cognitive (Recall)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the physiology of <i>raktavaha srotas</i> , and describe the <i>mula</i> of <i>rakta-vaha srotas</i> and mutual interdependence of <i>rakta</i> and <i>pitta</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	

CO 1	Describe the formation of <i>rakta-dhatu</i> , <i>ranjana of rasa</i> by <i>Ranjaka pitta</i> , features of <i>shuddha rakta</i> , specific functions of <i>rakta</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the characteristics of <i>raktasaara Purusha</i>	Cognitive (Recall)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the manifestations of <i>kshaya and vriddhi</i> and name <i>pradoshaja vikara</i> of <i>raktadhatu</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Assignment	Written/ Viva voce	F & S	I	<i>Vikriti Vigyana</i>
CO 1	Elaborate the concept about inclusion or exclusion of <i>rakta dhatu</i> as a fourth dosha.	Cognitive (Comprehension)	Nk	Kh	Discussion Brainstorming	Written/ Viva voce	F	I	
Topic-4. Mamsa Dhatu (3 hr) [Lecture: 2 hours, non-lecture: 1 hour]									
CO 1	Describe the etymology, derivation, synonyms, location, properties and functions of <i>mamsa dhatu</i> , physiology of <i>mamsavaha srotas</i> , <i>mula of mamsavaha srotas</i>	Cognitive (Recall)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the formation of <i>mamsa dhatu</i> and the definition of <i>peshi</i> characteristics of <i>mamsasaara purusha</i> ,	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe manifestations of <i>kshaya</i> and <i>vriddhi</i> of <i>mamsa Dhatu</i> & describe the physiological basis of these manifestations. Name <i>mamsa pradoshaja vikara</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Assignment	Written/ Viva voce	F & S	II	<i>Vikriti Vigyana</i>
Topic-5. Meda Dhatu (4 hr) [Lecture: 3 hours, non-lecture: 1 hour]									

CO 1	Describe the etymology, derivation, location, properties, functions and <i>pramana</i> of <i>meda dhatu</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the <i>medovaha srotas</i> , its <i>mula</i> , the physiology of <i>medovaha srotas</i> , formation of <i>medo dhatu</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the characteristics of <i>medasaara purusha</i> and manifestations of <i>kshaya</i> and <i>vridhhi</i> of <i>meda</i> . Name <i>meda pradoshaja vikara</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Assignment	Written/ Viva voce	F & S	II	
CO 1	Describe the clinical features of <i>sthaulya</i> and <i>karshya</i> along with the physiological basis of these clinical conditions	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	<i>Vikriti Vigyana</i>
CO 1	Record the properties of lipid & mamsa dhatu.	Cognitive (Comprehension)	Nk	Kh	Discussion	Self assessment	F	II	
Topic-6. Asthi Dhatu (3 hr) [Lecture: 2 hours, non-lecture: 1 hour]									
CO 1	Describe the definition, synonyms, classification, properties (<i>guna</i>), and formation of <i>asthi dhatu</i> .	Cognitive (Comprehension)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the <i>asthi dhara kala</i> ; relation with <i>purishdharakala</i> and the features of <i>asthi sarata</i> .	Cognitive (Comprehension)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the applied physiology of <i>asthi dhatu</i> (<i>asthi vridhhi/ asthi kshaya</i>) and name <i>asthi pradoshaja vikara</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Assignment	Written/ Viva voce	F & S	II	<i>Vikriti Vigyana</i>

Topic-7 Majja Dhatu (4 hr) [Lecture: 3 hours, non-lecture: 1 hour]									
CO 1	Describe the definition, synonyms and location (<i>sthana</i>) of <i>majja dhatu</i> .	Cognitive (Recall)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the formation of <i>majja dhatu majjavaha srotas</i> and its <i>mula</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe <i>majja dhara kala</i> in relation with <i>pittadhara kala</i> and the features of <i>majja sarata</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe applied physiology of <i>majja dhatu (majja vridhhi and kshaya)</i> and name <i>majja pradoshaja vikara</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Assignment	Written/ Viva voce	F & S	II	<i>Vikriti Vigyana</i>
CO 1	Comment on concept of <i>majja dhatu</i> and bone marrow	Cognitive (Comprehension)	Dk	Kh	Discussion Online teaching aids	Self assessment	F	II	
Topic-8. Shukra Dhatu (4 hr) [Lecture: 3 hours, non-lecture: 1 hour]									
CO 1	Describe the etymology and derivation of <i>shukra dhatu</i> , location, properties, <i>pramana</i> functions of <i>shukra dhatu</i> .	Cognitive (Recall)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the formation of <i>shukra dhatu, poshana krama</i> and its <i>updathu</i> and <i>mala</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Puzzle	Written/ Viva voce	F & S	II	
CO 1	Describe the <i>mula</i> of <i>shukravaha srotas</i> and the properties of <i>shuddha shukra</i> along with <i>shukra saara purusha</i> symptoms.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the features of <i>kshaya & vridhhi</i> of	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	<i>Vikriti Vigyana</i>

	<i>shukra dhatu & shukra pradoshaja vikara</i>				Assignment				
CO 4	Identify histological structure explain structure of different tissue (dhatu)	Cognitive (Comprehension) Psychomotor	Mk	Kh	Demonstration Perform	Practical Skill assessment OSPE	F & S		
Topic-9. Ashraya- Ashrayi Bhava (2 hr) [Lecture: 1 hour, non-lecture:1 hour]									
CO 1	Describe the concept of <i>ashraya-ashrayi bhava</i> i.e. inter-relationship among <i>dosha, dhatu mala and srotas</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	<i>Vikriti Vigyana</i>
CO 1	Describe the applied physiology of diseases affecting <i>saptadhatu</i> enlisted under dhatu <i>pradoshaja vikara</i> .	Cognitive (Comprehension)	Dk	Kh	Discussion Seminar	Written	F	III	
CO 1	Explain use of <i>Ashraya-Ashrayi Bhava</i> in laghan bruhan.	Cognitive (application)	Nk	Kh	Discussion	Self- assessment	SA	III	
Topic -10. Oja (4 hr) [Lecture: 3 hours, non-lecture: 1 hour]									
CO 1	Recall etymological derivation, definition, classification, and <i>pramana</i> of <i>oja</i>	Cognitive (Recall)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the process of formation of <i>ojas</i> along with locations and properties	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the concept of <i>vyadhikshamatva</i> , explain <i>bala vriddhikara bhava</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Classify <i>bala</i> and describe etiological factors (<i>kshaya karan</i>) for <i>oja visramsas, vyapat and kshaya</i> and elaborate	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	<i>Vikriti Vigyana</i>

	the manifestation of these clinical conditions.								
CO 1	Collect different opinions on oja given by different acharya and try to understand the logic behind it.	Cognitive (Recall)	Nk	Kh	Discussion	Written	F	III	
CO 1	Interpret your opinion about oja-bala-kapha in its normal state.	Cognitive (Recall)	Nk	Kh	Discussion	Self-assessment	SA	III	
Topic-11. Upadhatu (7 hr) [Lecture:6 hours, non-lecture: 1 hour]									
CO 1	Describe the general introduction, etymological derivation and definition of the term <i>upadhatu</i>	Cognitive (Recall)	Mk	K	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the formation, nourishment, properties, location and functions of each <i>upadhatu</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the characteristic features and methods of assessing <i>shuddha</i> and <i>dushita stanya</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	<i>Vikriti Vigyana</i>
CO 1	Describe the characteristic features of <i>vridhhi</i> and <i>kshaya</i> of <i>stanya</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe characteristic features of <i>shuddha</i> and <i>dushita artava</i> along with enumerating the differences between <i>raja</i> and <i>artava</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe <i>artava-vaha srotas</i> and its <i>mula</i> along with the common clinical conditions related to <i>artava-vaha srotas</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	<i>Vikriti Vigyana</i>

	<i>(kashartava, vandhyata, pradara etc).</i>								
CO 1	Describe the classification, thickness of each layer and functions of <i>tvak</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Interpret the skin layer as per contemporary science.	Cognitive (Recall)	Nk	Kh	Discussion	Written	F	III	
Topic 12. Mala (8 hr) [Lecture: 6 hours, non-lecture: 2 hours]									
CO 1	Describe the etymological derivation and definition of the term <i>mala</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Enumerate <i>aharamala</i> and describe of the process of formation of <i>aharamala</i> .	Cognitive (Recall)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the etymological derivation, definition, formation, properties, quantity and functions of <i>purisha</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the physiology of <i>purishavaha srotas</i> , <i>purish visarjana</i> and manifestations of <i>vridhhi</i> and <i>kshhaya</i> of <i>purisha</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Explain the relation between <i>purishdhara kala</i> and <i>asthidhara kala</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the etymological derivation, definition, formation, properties, quantity and functions of <i>mutra</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the physiology of <i>mutravaha srotas</i> and the process of urine formation and <i>mutra visarjana</i> in Ayurveda.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	

CO 1	Explain the manifestations of <i>vridhhi</i> and <i>kshhaya</i> of <i>mutra</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Explain the urge of micturition & defecation in perspective of reflexes	Cognitive (Application)	Nk	Kh	Discussion	Self-assessment	SA	III	
CO 1	Describe and enumerate <i>dhatumala</i> and describe the functions of each type of <i>dhatumala</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Explain the etymological derivation, definition, formation and functions of <i>sveda</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Explain the functions of <i>svedvaha srotas</i> along with describing the manifestations of <i>vridhhi</i> and <i>kshaya</i> of <i>sveda</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Review Ayurveda compendia for several colour of purish and <i>mutra</i> as per their different diseased conditions.	Cognitive (Application)	Nk	Kh	Discussion	Self-assessment	SA	III	
Topic 13. Indriya vijnyana (2 hr) [Lecture: 1 hour, non-lecture: 1 hour]									
CO 1	Describe the <i>pancha-jnyaanendriya</i> and physiology of perception of <i>shabda, sparsha, rupa, rasa and gandha</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Tutorial	Written/ Viva voce	F & S	III	<i>Padarth vidnyan</i>
CO 1	Describe the physiology of <i>karmendriya</i>	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
Topic 14. Manas (3 hr) [Lecture: 2 hours, non-lecture: 1 hour]									
CO 1	Describe location and properties, functions and objects of <i>manas</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	

CO 7	Describe the physiology of <i>dhee, driti, smriti</i> and <i>manovaha srotas</i> along with the applied physiology of <i>unmada and apasmara</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Real life experience	Written/ Viva voce	F & S	III	<i>Kayachikitsa</i>
CO7	Describe <i>kriyatmak</i> (physiological) importance of <i>manas</i>	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
Topic 15. Atma (2 hr) [Lecture: 2 hours, non-lecture: 0 hours]									
CO 1	Describe properties and functions of <i>atma</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S		
CO 7	Enumerate the difference between <i>paramatma</i> and <i>jivatma</i> , characteristic features of <i>atma</i> in living beings.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	<i>Padarth vidnyan</i>
CO 7	Explain characteristic features of <i>atma</i> in living beings.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO7	Describe <i>kriyatmak</i> (physiological) importance of <i>atma</i>	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion tutorials	Written/ Viva voce		III	
Topic 16. Nidra & Svapna (2 hr) [Lecture: 2 hours, non-lecture: 0 hours]									
CO 1	Describe the process of <i>nidrotipatti</i> , classify <i>nidra</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Explain the physiological and clinical significance of <i>nidra</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe <i>svapnotipatti</i> and types of <i>svapna</i> .	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Discuss about different types of <i>swapna</i> among your friends and try to understand relation of <i>swapna & prakriti</i> .	Cognitive (Comprehension)	Nk	Kh	Group Discussion	Team assessment	TA	III	

Part B (40 Hours) –									
Topic 1. Physiology of Hemopoietic System (7 hr) [Lecture: 5 hours, non-lecture: 2 hours]									
CO 1	Describe the composition, functions of blood and blood cells.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Stages and development of RBCs, WBCs, platelets.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the composition and functions of bone marrow	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the process of erythropoiesis and explain necessary factors for erythropoiesis.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the formation & destruction of RBCs	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the structure, types, synthesis and functions of haemoglobin along with abnormalities of Hb.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the types of WBCs	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the mechanism of hemostasis, (coagulation of blood) and blood clotting factors.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Seminar	Written/ Viva voce	F & S	I	
CO 1	Describe the ABO & Rh system of blood group and explain the physiological basis of blood groups.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	Medical Physiology
CO 1	Explain the concept of erythroblastosis fetalis on the basis of Rh incompatibility.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Seminar	Written/ Viva voce	F & S	I	
CO 1	Describe the classification and	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	

	functions of plasma proteins.								
CO 1	Describe the properties and hemostasis functions of platelets.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the physiological basis of manifestations of different blood disorders (anaemia, jaundice etc.)	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the functions of spleen.	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the functions of lymph.	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
Topic 2. Immune System (2 hr) [Lecture: 2 hours, non-lecture: 0 hours]									
CO 1	Describe classification of immunity (Innate, acquired and artificial),	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the different mechanisms involved in immunity: Humoral (B-cell mediated) and T-Cell mediated immunity.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Distinguish between the passive immunization and active immunization	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the applied physiology of immunity: Immunodeficiency diseases, Hypersensitivity reactions, Auto-immune diseases etc.	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion Seminar	Written/ Viva voce	F & S	I	
Topic 3. Cardiovascular Physiology (7 hr) [Lecture: 5 hours, non-lecture: 2 hours]									
CO 1	Describe the mechanical and electrical properties	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	

	of heart muscles, describe different phases of the Cardiac cycle.								
CO 1	Describe the physiological and clinical significance of heart sounds.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the physiology of regulation of cardiac output and venous return.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the physiological basis of ECG.	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the regulation of heart-rate and arterial pulse,	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Define and describe the regulation of systemic arterial blood pressure	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the physiology of fetal circulation.	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Define and describe the regulation of systemic arterial blood pressure	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	I	
CO 1	Describe the history of the discovery of blood circulation	Cognitive (Comprehension)	Nk	Kh	Online	Self assessment	SA	I	
Topic 4. Muscle physiology (2 hr) [Lecture: 2 hours, non-lecture: 0 hours]									
CO 1	Compare and contrast the functions and properties of skeletal muscles, cardiac muscles and smooth muscles.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the physiology of muscle contraction of all types of muscles.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
Topic 5. Skin, Adipose Tissue and circulating Lipids (3 hr) [Lecture: 2 hours, non-lecture: 1 hour]									
CO 1	Describe the functions of the skin, sweat glands, sebaceous glands and subcutaneous tissue	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	

CO 1	Describe the functions of Adipose Tissue including adipokines	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the process of formation & metabolism of lipoproteins like VLDL, LDL and HDL and that of triglycerides.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the functional anatomy and physiology of the male reproductive system	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the physiology of regulation of spermatogenesis, functions of testosterone and male sexual act	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe physiology of the female reproductive system including oogenesis, ovulation and hormonal regulation of the menstrual cycle	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the functions of placenta	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the physiology of lactation	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
CO 1	Describe the applied physiology of the reproductive system of male and female infertility.	Cognitive (Comprehension)	Nk	Kh	Lecture Discussion	Written/ Viva voce	F & S	II	
Topic 7. Renal Physiology (6 hr) [Lecture: 4 hours, non-lecture: 2 hours]									
CO 1	Describe the functional anatomy of kidney.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the functions of kidney, ureters and bladder.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe stages of the mechanism of urine formation.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion Semiar	Written/ Viva voce	F & S	III	

CO 1	Describe control of micturition.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the role of Juxta glomerular apparatus in regulation of blood pressure and pH of body fluids.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	Medical Physiology
CO 1	Describe the applied physiology of the urinary system (urolithiasis, acute and chronic renal failure etc).	Cognitive (Comprehension)	Dk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the physiology of special senses.	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the visual process and visual pathway	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the mechanism of hearing and auditory pathway	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the taste, smell and skin sensation	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	
CO 1	Describe the physiology of sleep and dreams	Cognitive (Comprehension)	Mk	Kh	Lecture Discussion	Written/ Viva voce	F & S	III	

List of Practicals

PRACTICALS (Marks-100)				
	List of Topics	Term	Lecture	Non-Lecture
1	Dhatu sararata parikshana	I	0	10
2.	Demonstrate laboratory equipment (spotting)	I	0	1
3.	Demonstrate blood collection	I	0	1
4.	Estimate haemoglobin	I	0	2
5.	Estimate bleeding time & clotting time	I	0	2
6.	Estimate blood grouping	I	0	2
7.	Prakriti parikshana	II	0	20
8.	Dosha vridhhi kshaya parikshana	II	0	4
9.	Dhatu vridhhi kshaya parikshana	II	0	5
10.	Nadi parikshana	II	0	3
11.	Pulse examination	II	0	2
12.	WBC estimation	II	0	2
13.	RBC estimation	II	0	2
14.	DLC estimation	II	0	2
15.	Measurement of Blood pressure	II	0	2
16.	Perform the procedure Inspection of respiratory system	II	0	2
17.	Perform the procedure Inspection of heart sound	II	0	3
18.	Agni parikshana	III	0	6
19.	Koshtha parikshana	III	0	2
20.	Urine examination	III	0	2
21.	Demonstrate ESR, PCV	III	0	1
22.	Observe the procedure of ECG	III	0	2
23.	Perform the procedure of examining the cranial nerves and reflexes	III	0	2

Table 4: Learning objectives (Practical) of AyUG- KS

A4 Course outcom e	B4 Learning Objective (At the end of the session, the Students should be able to)	C4 Domain/ sub	D4 Must to know/ desirabl e to know/Ni ce to know	E4 Level Does/ Shows how/ Knows how/ Know	F4 T-L method	G4 Assessment	H4 Formativ e /summati ve	I4 Te rm	J4 Integratio n
AyUG – KS Practical (100 marks) (Total 200 Hr)									
Practical (100 marks) =(Kriya Sharir 50 + Physiology 30 + Non Lecture practical activities 20)									
1. Assessment of prakriti parikshana (20 classes) [Lecture: 0 hours, non-lecture: 20 hours]									
CO 3	Describe the procedure of <i>prakriti parikshan</i> of CCRAS portal.	Cognitive	Mk	Kh	Lecture Demonstration Discussion Observe Tutorial	Practical Viva voce	F & S	II	
CO 3	Demonstrate <i>prakriti parikshan</i> under the supervision of teacher.	Psychomotor	Mk	Sh	Demonstration in practical room & Bed side clinic Discussion	Viva voce	F & S	II	
CO 3	Determines <i>prakriti</i> of a paerson in an individual independently	Psychomotor	Mk	Dose	Demonstration in practical room & Bed side clinic Discussion Perform	Practical Viva voce Skill assessment OSPE, DOPS, CBD, Simulation	F & S	II	
CO 1	Recite verses of <i>vata, pitta & kapha prakriti</i> .	Cognitive (Recall Comprehe nsion)	Dk	Kh	Discussion Recitation	Viva voce	F & S	II	
2. Assessment of dhatusarata parikshana (10 classes) [Lecture: 0 hours, non-lecture: 10 hours]									
CO 2	Describe the procedure of	Cognitive	Mk	Kh	Lecture Demonstration Discussion Observe	Practical Viva voce	F & S	I	

	<i>dhatasarata parikshana</i>								
CO 2	Demonstrate <i>dhatasarata parikshana</i> under the supervision of the teacher.	Psychomotor	Mk	Sh	Demonstration in practical room & Bed side clinic Discussion Assist	Viva voce	F & S	I	
CO 2	Evaluates <i>dhatasarata</i> in an individual independently	Psychomotor	Mk	Dose	Demonstration Bed side clinic Discussion Perform	Practical Viva voce Skill assessment OSPE, DOPS, CBD, Simulation	F & S	I	
CO 1	Recite verses of <i>ashta dhatasarata</i> .	Cognitive (Recall & Comprehension)	Dk	Kh	Discussion Recitation	Viva voce	F & S	I	
3. Assessment of agni parikshana (6 classes) [Lecture: 0 hours, non-lecture: 6 hours]									
CO 2	Describe the procedure of <i>agni parikshana</i>	Cognitive/comprehension	Mk	Kh	Lecture Demonstration Discussion Observe	Practical Viva voce	F & S	III	
CO 2	Demonstrate <i>agni parikshana</i> under the supervision of the teacher.	Psychomotor	Mk	Sh	Demonstration Bed side clinic Discussion Assist	Viva voce	F & S	III	
CO 2	Analyse <i>agni</i> in an individual independently	Psychomotor	Mk	Dose	Demonstration Bed side clinic Discussion Perform	Practical Viva voce Skill assessment OSPE	F & S	III	
CO 1	Recite verses of <i>agni</i> .	Cognitive (Recall & Comprehension)	Dk	Kh	Discussion Recitation	Viva voce	F & S	III	
4. Assessment of koshtha parikshana (2 classes) [Lecture: 0 hours, non-lecture: 2 hours]									
CO 2	Discuss the procedure of <i>koshtha parikshana</i>	Cognitive	Mk	Kh	Lecture Demonstration Discussion Observe	Practical Viva voce	F & S	III	
CO 2	Demonstrate <i>koshtha parikshana</i> under the	Psychomotor	Mk	Sh	Demonstration Bed side clinic Discussion	Viva voce	F & S	III	

	supervision of the teacher.				Assist				
CO 2	Evaluate <i>koshtha</i> of an individual independently	Psychomotor or	Mk	Dose	Demonstration Bed side clinic Discussion rform	Practical Viva voce Skill assessment OSPE	F & S	III	

5. Assessment of dosha vrddhi kshaya lakshana (4 classes) [Lecture: 0 hours, non-lecture: 4 hours]									
CO 3	Discuss the procedure of <i>dosha vrddhi kshaya lakshana</i>	Cognitive	Mk	Kh	Lecture Demonstration Discussion Observe	Practical Viva voce	F & S	II	
CO 3	Demonstrate <i>dosha vrddhi kshaya parikshana</i> under the supervision of the teacher.	Psychomotor	Mk	Sh	Demonstration Bed side clinic Discussion Assist	Viva voce	F & S	II	
CO 3	Perform <i>dosha vrddhi kshaya parikshana</i> in an individual independently	Psychomotor	Mk	Dose	Demonstration Bed side clinic Discussion Perform	Practical Viva voce Skill assessment OSPE	F & S	II	
CO 1	Recite verses of <i>dosha vrddhi kshaya</i> .	Cognitive (Recall Comprehension)	Dk	Kh	Discussion Recitation	Viva voce	F & S	II	
6. Assessment of dhatu vrddhi kshaya parikshana (5 classes) [Lecture: 0 hours, non-lecture: 5 hours]									
CO 3	Describe the procedure of <i>dhatu vrddhi kshaya lakshana</i>	Cognitive	Mk	Kh	Lecture Demonstration Discussion Observe	Practical Viva voce	F & S	II	
CO 3	Demonstrate <i>dhatu vrddhi kshaya parikshan</i> under the supervision of the teacher.	Psychomotor	Mk	Sh	Demonstration Bed side clinic Discussion Assist	Viva voce	F & S	II	
CO 3	Perform <i>dhatu vrddhi kshaya parikshan</i> in an individual independently	Psychomotor	Mk	Dose	Demonstration Bed side clinic Discussion Perform	Practical Viva voce Skill assessment OSPE	F & S	II	
CO 1	Recite verses of	Cognitive	Dk	Kh	Discussion	Viva voce	F & S	II	

	<i>dhatu vrddhi kshaya.</i>	(Recall & Comprehension)			Recitation				
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	7. Assessment of nadi parikshana (3 classes) [Lecture: 0 hours, non-lecture: 3 hours]								
CO 5	Describe the procedure of <i>nadi parikshana</i>	Cognitive	Mk	Kh	Lecture Demonstration Discussion Observation Tutorial	Practical Viva voce	F & S	II	
CO 5	Demonstrate <i>nadi parikshana</i> under the supervision of the teacher.	Psychomotor	Mk	Sh	Demonstration Bed side clinic Discussion Assist	Viva voce	F & S	II	
CO 5	Find out recent advances in nadi pariksha	Cognitive	Mk	Kh	Lecture Demonstration Discussion Observe	Practical Viva voce OSPE	F & S	II	
Part B 30 practical of 2 hr each									
[Lecture: 0 hours, non-lecture: 30 hours]									
CO 4	Explain the general laboratory etiquette demonstrate the use of laboratory equipment.	Cognitive Psychomotor	Mk	Sh	Lecture Demonstration Discussion Observe	Practical Viva voce Skill assessment OSPE	F & S	I	
CO 4	Discuss procedure of collection of a blood sample – prick, venepuncture method, use of anticoagulants.	Cognitive	Mk	Kh	Lecture Demonstration Discussion Assist	Viva voce	F & S	I	
CO 4	Describe Observe procedure of haemoglobin estimation, bleeding time and clotting time, blood grouping and Rh typing,	Cognitive	Mk	Kh	Lecture Demonstration Discussion Assist	Viva voce	F & S	I	

	differential Leukocyte Counting procedure.								
CO 4	Evaluate Hb, Bleeding time, clotting time, blood grouping & Rh typing, several Leukocyte Count (independently).	Psychomotor	Mk	Sh	Lecture Demonstration Discussion Perform	Practical Viva voce Skill assessment OSPE	F & S	I	
CO 4	Describe the procedure of WBC counting, RBC counting.	Cognitive	Mk	Kh	Lecture Demonstration Discussion Assist	Viva voce	F & S	II	
CO 4	Count WBC, RBC (independently).	Psychomotor	Mk	D	Perform	Practical	F	II	
CO 4	Describe the procedure of ESR, PCV	Cognitive	Mk	Sh	Lecture Demonstration Discussion Assist	Viva voce	F	III	
CO 4	Describe the procedure of physical and chemical examination of urine.	Cognitive	Mk	Kh	Lecture Demonstration Discussion Assist	Viva voce	F & S	III	
CO 4	Identify physical and chemical properties of urine.	Psychomotor	Dk	Sh	Lecture Demonstration Discussion Assist	Practical Viva voce Skill assessment OSPE, DOPS	F & S	III	
CO 4	Discuss the procedure of pulse examination demonstrated.	Cognitive	Mk	Kh	Lecture Demonstration Discussion Assist	Viva voce	F & S	II	
CO 4	Examine pulse independently.	Psychomotor	Mk	Sh	Lecture Demonstration Discussion Perform	Practical Viva voce Skill assessment OSPE	F & S	II	
CO 4	Describe the procedure of measurement of blood pressure	Cognitive	Mk	Kh	Lecture Demonstration Discussion Assist	Viva voce	F & S	II	

CO 4	Measure blood pressure (independently).	Psychomotor	Mk	Sh	Lecture Demonstration Discussion Perform	Practical Viva voce Skill assessment OSPE	F & S	II	
CO 4	Discuss the procedure of inspection of CVS and assessment of heart sounds	Cognitive	Mk	Kh	Lecture Demonstration Discussion Assist	Viva voce	F & S	II	
CO 4	Illustrate inspection of CVS and assessment of heart sounds (independently).	Psychomotor	Mk	Sh	Lecture Demonstration Discussion Perform	Practical Viva voce Skill assessment OSPE	F & S	II	
CO 4	Discuss the procedure of ECG recording demonstrated by the teacher.	Cognitive	Mk	Kh	Lecture Demonstration Discussion Assist	Viva voce Spotting	F & S	II	
CO 4	Discuss procedure of inspection of the respiratory system demonstrated by the teacher.	Cognitive	Mk	Kh	Lecture Demonstration Discussion Assist	Viva voce	F & S	II	
CO 4	Examine of the respiratory system (independently).	Psychomotor	Mk	Sh	Lecture Demonstration Discussion Perform	Practical Viva voce Skill assessment OSPE	F & S	II	
CO 4	Discuss the procedure of examining the cranial nerves and reflexes (superficial/ deep /visceral) demonstrated by the teacher.	Cognitive	Mk	Kh	Lecture Demonstration Discussion Assist	Viva voce Skill assessment OSPE	F & S	III	
CO 4	Perform the procedure of examining the cranial nerves and	Psychomotor	Mk	Sh	Lecture Demonstration Discussion Perform	Practical Viva voce Skill assessment OSPE	F & S	III	

reflexes (superficial/deep/ visceral) by students independently.									
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Table 5: Non-Lecture Activities Course AyUG- KS

Theory Non Lecture 50 (Paper I -25 & Paper II-25)		No of Activity hours
1.	Assignment - homework based	3
2.	Brainstorming	2
3.	Buzz group	1
4.	Case based learning	1
5.	Confusion technique	1
6.	Debate	1
7.	Demonstration	2
8.	Direct observation skill (DOPS)	1
9.	Flipped classroom	1
10.	Group Discussion	3
11.	Jigsaw or puzzle	1
12.	Mnemonics	2
13.	Model based learning	1
14.	Online teaching aids	1
15.	Panel discussion	1
16.	Problem based learning	2
17.	Real-life experience	1
18.	Recitation	3
19.	Role Play	1
20.	Self directed learning	3
21.	Seminar by students	5
22.	Simulated condition	1
23.	Skill assessment	2
24.	Symposium	2
25.	Team project work	1
26.	Think-Pair-Share	2
27.	Tutorial	3
28.	Video show	2
Practical Non Lecture 100 (200 hours)		
1.	Ayurveda Practicals – 50	100
2.	Modern Practicals – 30	60
3.	Activity based learning – 20	40
	Communication Skills, Small project / Experiment designing, Task-based learning, Teamwork based learning, Team project, Problem Based Learning (PBL)/(CBL), Group Discussion, Workshops, Field visits, Preparation of charts 1, models and computerized simulation models etc. , Seminar presentations by students	
Total Non Lecture hours		250

Additional Suggested topics for tutorials

Point No.	Name of Topic
T – 1 CO 6	<i>Atma lakshana</i>
T – 2 CO3	Characteristics of <i>Prakriti Eka doshaja, dwandwaja and sama prakriti. Clinical importance of deha prakriti, anukatva.</i>
T – 3 CO5	<i>Nadi vigyan</i>
T – 4 CO6	<i>Anukatva</i>
T – 5 CO6	<i>Indriya panch panchak and physiological study of panchajyanendriya and panchakarmendriya.</i>
T – 6 CO6	<i>Meanings of terminologies used for dhatu poshana nyaya related to dhatu poshana</i>
T – 7 CO1	<i>Ahara dravya vargikarana</i>
T – 8 CO1	<i>Avasthapaka & Vipak</i>

Suggested topics for seminar topics

Sr. No.	Content
S – 1 CO8	<i>Tridosha</i>
S – 2 CO8	<i>Agni</i>
S – 3 CO8	<i>Rasa rakta samvahan</i>
S – 4 CO8	<i>Pranavah srotas and shwasana prakriya</i>
S – 5 CO8	<i>Ashtavidh sara</i>
S – 6 CO8	<i>Trividh nyaya</i>
S – 7 CO8	<i>Prakriti</i>
S – 8 CO8	Basic concept of nervous system
S – 9 CO8	Rh Incompatibility
S – 10 CO8	Digestion of Carbohydrates, proteins & fats
S – 11 CO8	Blood clotting mechanism
S – 12 CO8	Immune system
S – 13 CO8	O ₂ -CO ₂ gaseous exchange
S – 14 CO8	Hormones
S – 15 CO8	Renal system

Suggested topics for group discussion

Sr. No.	Content
GD – 1 CO1	<i>Dosha dhatu mala mulam hi shariram</i>
GD – 2 CO1	<i>Concept of agni</i>
GD – 3 CO1	<i>Concept of upadhatu</i>
GD – 4 CO1	<i>Role of ranjak pitta in formation of rakta dhatu</i>
GD – 5 CO1	<i>Concept of srotas</i>
GD – 6 CO1	<i>Physiology of purishadhara kala / asthidhara kala. Pittadhara kala/ majjadhara kala</i>
GD – 7 CO1	<i>Generation of doshas</i>
GD – 8 CO1	<i>Ashraya-ashrayi bhava sambhadha of asthi and vata</i>
GD – 9 CO1	<i>Process of urine formation described in ayurveda compendia</i>
GD – 10 CO1	<i>Avasthapaka</i>
GD – 11 CO1	<i>Concept of shatkriyakala</i>
GD – 12 CO1	<i>Manas Prakruti</i>

Table 6: Assessment Summary

6 A- Number of papers and Marks Distribution

S.No.	Subject Code	Papers	Theory	Practical/Clinical Assessment					Grand Total
				Practical/Clinical	Viva	Electives	IA	Sub Total	
1.	AyUG-KS	2	200	100	70	-	30	200	400

6 B - Scheme of Assessment (formative and Summative)

SR.NO.	PROFESSIONAL COURSE	DURATION OF PROFESSIONAL COURSE		
		First Term (1-6 Months)	Second Term (7-12 Months)	Third Term (13-18 Months)
1	First	3 PA & First TT	3 PA & Second TT	3 PA & UE

PA: Periodical Assessment; TT: Term Test; UE: University Examinations

6 C - Calculation Method for Internal assessment Marks (30 Marks)

TERM	PERIODICAL ASSESSMENT*					TERM TEST**	TERM ASSESSMENT	
	A	B	C	D	E	F	G	H
	1 (15 Marks)	2 (15 Marks)	3 (15 Marks)	Average (A+B+C/3)	Converted to 30 Marks (D/15*30)	Term Test (Marks converted to 30)	Sub Total _/60 Marks	Term Assessment (.../30)
FIRST							E+F	(E+F)/2
SECOND							E+F	(E+F)/2
THIRD						NIL		E
Final IA	Average of Three Term Assessment Marks as Shown in 'H' Column.							
	Maximum Marks in Parentheses *Select an Evaluation Methods which is appropriate for the objectives of Topics from the Table 6 D for Periodic assessment. Conduct 15 marks assessment and enter marks in A, B, and C. ** Conduct Theory (100 Marks)(MCQ(20*1 Marks), SAQ(8*5), LAQ(4*10)) and Practical (100 Marks) Then convert to 30 marks.							

6 D - Evaluation Methods for Periodical Assessment

S. No.	Evaluation Methods for Periodical Assessment
1.	Practical / Clinical Performance
2.	Viva Voce, MCQs, MEQ (Modified Essay Questions/Structured Questions)
3.	Open Book Test (Problem Based)
4.	Summary Writing (Research Papers/ Samhitas)
5.	Class Presentations; Work Book Maintenance
6.	Problem Based Assignment
7.	Objective Structured Clinical Examination (OSCE), Objective Structured Practical Examination (OPSE), Mini Clinical Evaluation Exercise (Mini-CEX), Direct Observation of Procedures (DOP), Case Based Discussion (CBD)
8.	Extra-curricular Activities, (Social Work, Public Awareness, Surveillance Activities, Sports or Other Activities which may be decided by the department).
9.	Small Project
10.	Other activities explained in Table 3 Column G3 as per indicated term and objective of the topic.

6 E- Paper Layout

I PROFESSIONAL BAMS EXAMINATIONS

AyUG-KS

Paper-I

Time: 3 Hours Maximum Marks: 100

INSTRUCTIONS: All questions compulsory

TOTAL MARKS 100.

		Number of Questions	Marks per question	Total Marks
Q 1	Multiple Choice Questions (MCQ)	20	1	20
Q 2	Short answer questions (SAQ)	8	5	40
Q 3	Long answer questions (LAQ)	4	10	40
				100

AyUG-KS

Paper-II

Time: 3 Hours Maximum Marks: 100

INSTRUCTIONS: All questions compulsory

TOTAL MARKS 100.

		Number of Questions	Marks per question	Total Marks
Q 1	Multiple Choice Questions (MCQ)	20	1	20

Q 2	Short answer questions (SAQ)	8	5	40
Q 3	Long answer questions (LAQ)	4	10	40
				100

6 F- Disribution of Theory Exam

	Paper I Part-A (Marks-60)	B Term	C Marks	D Type of Questions "Yes" can be asked. "No" should not be asked.		
				MCQ (1 Mark)	SAQ (5 Marks)	LAQ (10 Marks)
1	Sharir:	I	8	Yes	Yes	No
2	Basic principles of Ayurveda:	I		Yes	Yes	No
3.	Tridosha:	I		Yes	Yes	No
4.	Vata Dosha:	I	26	Yes	Yes	Yes
5.	Pitta Dosha:	I		Yes	Yes	Yes
6.	Kapha Dosha:	II		Yes	Yes	Yes
7.	Dosha Vriddhi-Kshaya:	II		Yes	Yes	No
8.	Kriyakala:	II		Yes	Yes	No
9	Prakriti: Deha- Prakriti: Manasa- Prakriti:	II	26	Yes	Yes	Yes
10.	Ahara:	III		Yes	Yes	Yes
11.	Agni:	III		Yes	Yes	Yes
12.	Aharapaka	III		Yes	Yes	Yes
Part-B (Marks-40)						
1	Physiology Homeostasis:	I	23	Yes	Yes	Yes
2	Physiology of Respiratory system:	II		Yes	Yes	Yes
3	Physiology of Gastrointestinal system:	II		Yes	Yes	Yes
4	Physiology of Nervous System:	III	17	Yes	Yes	Yes
5	Physiology of Endocrine glands:	III		Yes	Yes	Yes

Paper II PART-A (Marks-60)				D Type of Questions "Yes" can be asked. "No" should not be asked.		
A List of Topics AyUG-KS	B Term	C Marks	MCQ (1 Mark)	SAQ (5 Marks)	LAQ (10 Marks)	
Part-A (Marks-60)						
1	Dhatu:	I	18	Yes	Yes	No
2	Rasa Dhatu:	I		Yes	Yes	Yes
3.	Rakta Dhatu:.	I		Yes	Yes	Yes
4.	Mamsa Dhatu:	I		Yes	Yes	Yes
5.	Meda Dhatu:	I		Yes	Yes	Yes
6.	Asthi Dhatu:	II	19	Yes	Yes	Yes
7.	Majja Dhatu :	II		Yes	Yes	Yes
8.	Shukra Dhatu:	II		Yes	Yes	Yes
9	Concept of Ashraya-Ashrayi bhava	II		Yes	Yes	No
10.	Ojas:	II		Yes	Yes	Yes
11.	Upadhatu: Stanya: Artava: Tvak:	II	23	Yes	Yes	Yes
12.	Mala: Purisha: Mutra: Sveda: Dhatumala:	III		Yes	Yes	Yes
13	Indriya vidnyan:	III		Yes	Yes	Yes
14	Manas:	III		Yes	Yes	Yes
15	Atma:	III		Yes	Yes	No
16	Nidra & Swapna:	III		Yes	Yes	No
Part-B (Marks-40)						
1	Haemopoetic system:	I	18	Yes	Yes	Yes
2	Immunity:	I		Yes	Yes	No
3	Physiology of cardio-vascular system:	I		Yes	Yes	Yes
4	Muscle physiology:	II	07	Yes	Yes	No
5	Adipose tissue:	II		Yes	Yes	No
6	Physiology of male and female reproductive	II	15	Yes	Yes	Yes
7	Physiology of Excretion:	III		Yes	Yes	Yes
8	Special Senses, Sleep and Dreams:	III		Yes	Yes	Yes

6 G- Question paper blue print

Paper I

AyUG-KS		
A Question Sr. No	B Type of Question	C Question Paper Format
.Q1	<p>Multiple choice Questions (MCQ)</p> <p>20 Questions</p> <p>1 mark each</p> <p>All compulsory</p> <p>Must know part - 15 MCQ</p> <p>Desirable to know - 3 MCQ</p> <p>Nice to know part - 2 MCQ</p>	<p>MCQ no. Topic No</p> <ol style="list-style-type: none"> 1. Topic number part A 1 2. Topic number part A 2 3. Topic number part A 3 4. Topic number part A 4 5. Topic number part A 4 6. Topic number part A 5 7. Topic number part A 6 8. Topic number part A 7 9. Topic number part A 8 10. Topic number part A 9 11. Topic number part A 9 12. Topic number part A 10 13. Topic number part A 11 14. Topic number part A 12 15. Topic number part A 12 16. Topic number part B 1 17. Topic number part B 2 18. Topic number part B 3 19. Topic number part B 4 20. Topic number part B 5
Q2	<p>Short answer Questions (SAQ)</p> <p>Eight Questions</p> <p>5 Marks Each</p> <p>All compulsory</p> <p>Must know - 7 SAQ</p> <p>Desirable to know - 1 SAQ</p> <p>No questions on Kice to know</p>	<ol style="list-style-type: none"> 1. Topic no. Part A 1/ Topic no. Part A 2/ Topic no. Part A 3 2. Topic no. Part A 4/ Topic no. Part A 5/ Topic no. Part A 6 3. Topic no. Part A 7/Topic no. Part A 8 4. Topic no. Part A 9/Topic no. Part A 10 5. Topic no. Part A 11/ Topic no. Part A 12/ 6. Topic no. Part B 1/ Topic no. Part B 2/ 7. Topic no. Part B 3 8. Topic no. Part B 4/ Topic no. Part B 5
Q3	<p>Long answer Questions (LAQ)</p>	<ol style="list-style-type: none"> 1. Topic no. Part A 4/ Topic no. Part A 5/ Topic no. Part A 6 2. Topic no. Part A 9/ Topic no. Part A 10/ Topic no. Part A 11/

	<p>Four Questions 10 marks each All compulsory</p> <p>All questions on must know. No Questions on Nice to know and Desirable to know</p>	<p>Topic no. Part A 12</p> <p>3. Topic no. Part B 1/ Topic no. Part B 2/ Topic no. Part B 3</p> <p>4. Topic no. Part B 4/ Topic no. Part B 5</p>
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Paper II

AyUG-KS		
A Question Sr. No	B Type of Question	C Question Paper Format
.Q1	<p>Multiple choice Questions (MCQ)</p> <p>20 Questions</p> <p>1 mark each</p> <p>All compulsory</p> <p>Must know part - 15 MCQ Desirable to know - 3 MCQ Nice to know part - 2 MCQ</p>	<p>MCQ no. Topic no.</p> <ol style="list-style-type: none"> 1. Topic number part A 1/2 2. Topic number part A 3 3. Topic number part A 4/5 4. Topic number part A 6 5. Topic number part A 7 6. Topic number part A 8 7. Topic number part A 9/10 8. Topic number part A 11 9. Topic number part A 12 10. Topic number part A 13/14/15/16 11. Topic number part B 1 12. Topic number part B 2 13. Topic number part B 3 14. Topic number part B 4 15. Topic number part B 5 16. Topic number part B 6 17. Topic number part B 6 18. Topic number part B 7 19. Topic number part B 7 20. Topic number part B 8
Q2	<p>Short answer Questions (SAQ)</p> <p>Eight Questions 5 Marks Each All compulsory</p> <p>Must know - 7</p>	<ol style="list-style-type: none"> 1. Topic no. Part A 1/ Topic no. Part A 2/ Topic no. Part A 3/ Topic no. Part A 4/ Topic no. Part A 5 2. Topic no. Part A 6/ Topic no. Part A 7/ Topic no. Part A 8/ Topic no. Part A 9/ Topic no. Part A 10 3. Topic no. Part A 11/ Topic no. Part A 12 4. Topic no. Part A 13/ Topic no. Part A 14/ Topic no. Part A 15

	Desirable to know - 1 SAQ No questiona on Nice to know	Topic no. Part A 16 5. Topic no. Part B 1/ Topic no. Part B 2/ Topic no. Part B 3/ 6. Topic no. Part B 4/ Topic no. Part B 5 7. Topic no. Part B 6/ Topic no. Part B 8 8. Topic no. Part B 7
Q3	Long answer Questions (LAQ) Four Questions 10 marks each All compulsory All questions on Must know. No Questions on Nice to know and Desirable to know	1. Topic no. Part A 2/ Topic no. Part A 3/ Topic no. Part A 4/ Topic no. Part A 5 2. Topic no. Part A 6/ Topic no. Part A 7/ Topic no. Part A 8/ Topic no. Part A 10 3. Topic no. Part A 11/ Topic no. Part A 12/ Topic no. Part A 13/ Topic no. Part A 14 4. Topic no. Part B 1/ Topic no. Part B 2/ Topic no. Part B 3

6 H Distribution of Practical Exam

(Practical 100 +Viva 70+ IA 30) = (Total 200 Marks)

AyUG-KS			
SN	Heads	Topic	Marks
A	Practical		
1	Spotting	Spotting (including two problem-based test) 1. Histology slide 2. ECG report (counting heart rate etc.) 3. Blood report (normal-abnormal values and significance) 4. Photograph of prakruti character. 5. Problem based sara/agni parikshan. 6. Case of vrudhhi kshay lakshan. 7. Aplicability of one spot used in haematological practical. 8. Identify the difference between two things & use. 9. Model based 10. Human experiment related	10 Marks
2	Ayu. Practical	Performance based components. (Take only one practical separately OR make combination of few components of more than one practical) Ayurveda practical - Prakriti parikshana (Self/ volunteer / patients)	40 Marks

		Sara parikshana Agni & koshta <i>parikshana</i> Dosha vrddhi-kshaya lakshana/ Dhatu vriddhi -kshaya Lakshana	
3	Lab. Practical	Laboratory practical (Hb, BT, CT, Blood group, Urine exam) Human physiology practical (pulse examination, BP, heart sounds, reflexes)	30 Marks
4	Project work	Project work (Activity based)	10 Marks
5	Practical Record	Practical Record	10 Marks
		Total	100 Marks
B	Viva Voce	General viva voce based on Ayurveda (20), Viva on instruments (20), Structured viva on Part B (refer Table 2)(10), Recitation of verses (15), and Communication skill (5)	70 Marks
C	IA	Internal Assessment	30 Marks
		Total Marks	200 Marks

7. References / Resources

- Ayurvediya Kriyasharir - Ranjit Rai Desai
- Kayachikitsa Parichaya - C. Dwarikanath
- Prakrit Agni Vigyan - C. Dwarikanath
- Sharir Kriya Vigyan - Shiv Charan Dhyani
- Abhinava Sharir Kriya Vigyana - Acharya Priyavrata Sharma
- Dosha Dhatu Mala Vigyana - Shankar Gangadhar Vaidya
- Prakrita Dosha Vigyana - Acharya Niranjana Dev
- Tridosha Vigyana - Shri Upendranath Das
- Sharira Tatva Darshana - Hirlekar Shastri
- Prakrita Agni Vigyana - Niranjana Dev
- Deha Dhatvagni Vigyana - Vd. Pt. Haridatt Shastri
- Sharir Kriya Vigyana (Part 1-2) - Acharya Purnchandra Jain
- Abhinava Sharir Kriya Vigyana - Dr. Shiv Kumar Gaur
- Pragyogik Kriya Sharir - Acharya P.C. Jain
- Kaya Chikitsa- Ramraksha Pathak
- Kaya Chikitsa Parichaya - Dr. C. Dwarkanath
- Concept of Agni - Vd. Bhagwan Das
- Purush Vichaya - Acharya V.J. Thakar
- Kriya Sharir - Prof. Yogesh Chandra Mishra
- Sharira Kriya Vijnana (Part 1 and 2) – Nandini Dhargalkar
- Sharir Kriya Vigyana - Prof. Jayaram Yadav & Dr. Sunil Verma.
- Kriya Sharir mcq – Dr. Kiran Tawalare
- Basic Principles of Kriya-Sharir (A treatise on Ayurvedic Physiology) - Dr. Srikant Kumar Panda
- Sharir Kriya – Part I & Part II – Dr. Ranade, Dr. Deshpande & Dr. Chobhe
- Human Physiology in Ayurveda - Dr Kishor Patwardhan
- Textbook of Physiology - Gyton & Hall
- Review of medical physiology – William Ganong
- Essentials of Medical Physiology - Sembulingam, K.
- Concise Medical Physiology - Chaudhari, Sujit. K.
- Fundamental of Anatomy & Physiology - Martini
- Principals of Anatomy & Physiology - Tortora & Grabowski
- Human Physiology - Richards, Pocock
- Samson Wrights Applied Physiology, Keele, Neil, joels
- Ayurveda Kriya Sharira - Yogesh Chandra Mishra
- Textbook of Medical Physiology - Indu Khurana
- Tridosha Theory - Subrahmanya Shastri
- Dosha Dhatu Mala vigyan – S. G. Vartak
- Purush Vichaya – Jayanad Thakar
- All Samhitas.
- Ayurvediya Shabda kosha.
- Vachaspatyam
- Shabdakalpadrum
- Monir Williams Sanskrit dictionary.

**COURSE CURRICULUM FOR FIRST PROFESSIONAL BAMS
(PRESCRIBED BY NCISM)**

शास्त्रं ज्योतिः प्रकाशार्थं दर्शनं बुद्धिर्सात्मनः।

**SAMHITA ADHYAYAN-1
(SUBJECT CODE- AyUG-SA1)
STUDY OF AYURVEDA CLASSICAL TEXT
(Applicable from 2021-22 batch onwards for 5 years or until
further notification by NCISM, whichever is earlier)**



प्राणाभिसरः प्राणायतनानाम्

**BOARD OF AYURVEDA
NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE
NEW DELHI-110058**



Samhita

NCISM
**I professional Ayurvedcharya
(BAMS)**

Subject Code: AyUG-SA1

Samhita Adhyayan 1

Summary

Total number of Teaching : 400			
Lecture (LH) - Theory		140	140 (LH)
Paper I	140		
Non-Lecture (NLH) – Theory		260	260 (NLH)
Paper I	260		

Examination (Papers & Mark Distribution)					
Item	Theory Component Marks	Practical Component Marks			
		Practical	Viva	Elective	IA
Paper I	100	--	75	10 (Set-FC)	15
Sub-Total	100	100			
Total marks	200				

PREFACE

The main purpose of Samhita teaching is to enable the students to read, understand and practice the Samhitas. Samhita is nothing but an ancient Practical Manual of Ayurveda. Samhita teaching and learning process need to be practically oriented for a better understanding of the subject. It is the need of time to make some addition in the current teaching and learning process of Samhita to make it more relevant, practical, and contemporary. New teaching technology tools will certainly be helpful in the effective delivery of knowledge of Samhita. As per the revised regulation, the nomenclature of the subject is **Samhita Adhyayana-I**.

The subject includes Ashtanga Hridayam Sutrasthana 1 to 15 chapters and Charaka Samhita Sutrasthana 1 to 12 chapters as a part of Samhita Adhyayana-I for First Professional BAMS course. In this revision, NCISM has tried its best to take Samhita teaching beyond the four walls of the classroom and connected it with today's living of people and society. For effective content delivery and to create interest in the subject of Samhita, it becomes evident to teach Samhita with practical demonstrations.

Samhita Path is the first step and most effective method of Samhita teaching adopted and practiced by our ancient acharyas. In order to facilitate practice the ancient Samhita learning, twice the non-lecture class of the total classes is exclusively reserved for Samhita learning activity. To make baseline uniformity in the process of learning, teaching methodology guidelines are provided which shall be followed while teaching the chapters of both the Samhitas. Students learn various principles of Ayurveda in Samhitas. Terminologies make the task initially difficult. Hence to make the Samhita learning more interesting, various education technology tools are included in the curriculum at various places understanding the need of the topic. Activity-based learning will enable the internalization of the concepts and will build a strong platform while learning other subjects of Ayurved.

As explained in Samhitas things learned in shastra(Science) and experience practically both when happens together will enhance the knowledge. It will further lead to application in practice.

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Course Code and Name of Course

	Course code	Name of Course
	AyUG-SA1	Samhita Adhyayan 1

AyUG SA1 Course

Table 1- Course learning outcomes and matched PO.

SR1 CO No	A1 Course learning Outcomes (CO) AyUG SA1 At the end of the course AyUG-SA1, the students should be able to-	B1 Course learning Outcomes matched with program learning outcomes.
CO1	Distinguish the different <i>Samhitas</i> , their importance and methodology and familiarize with the tools of <i>Samhita Adhyayan</i> . (eg: <i>tantrayukti</i>)	PO2, PO9
CO2	Interpret and apply the <i>sutras</i> from the <i>Samhitas</i> .	PO1
CO3	Apply and evaluate the <i>Tridosha</i> , <i>Saptadhatu</i> and <i>Mala</i> principles (theory).	PO1, PO3, PO5
CO4	Practice and prescribe <i>Dincharya</i> (daily regimen), <i>Ritucharya</i> (seasonal regimen) and dietary principles for preservation of health.	PO2, PO7, PO8
CO5	Explore and distinguish different types of food, food groups and medicinal <i>dravyas</i> mentioned in <i>Samhitas</i> .	PO1, PO2
CO6	Identify various etiopathological factors and predict different treatment principles	PO1, PO5
CO7	Recognize and explain the fundamentals behind various therapeutics (<i>Shodhan</i> and allied) and parasurgical therapies.	PO2, PO5
CO8	Develop a code of behavior and show mature behaviour in particular to the scientific deliberations.	PO 6, PO 9

Table 2 : Contents of Course AyUG-SA1

Sr No	A2 List of Topics AyUG-SA1	B2 Term	C2 Marks	D2 Lecture	E2 Non-Lecture
1.	Introduction to Samhita- i. Definition of Samhita and its types and nomenclature. (Samhita- forms, nomenclature, commentary, types etc.) ii. Brief Introduction of Samhitas (Bruhatrayee), their commentaries and commentators (Preceptors, aut hours, redactors, commentators) iii. Tantrayukti, Tantraguna and Tantradosha iv. RachanaShaili & BhashaShaili (Composition and Language style) of Bruhatrayee. v. Anubandha Chatushtya vi. Ashta-Prashna vii. Trividha Jnyanopaya	1	(Indicated in Viva)	15	09
Ashtang Hriday Samhita - Sutrasthan (1-15 Adhyaya) -			50 marks		
2.	AH Su.1. Ayushkamiya Adhyaya- i. Ashtang Hridaya parichaya (Introduction to Ashtang Hridaya) ii. Dosha-dhatu-mala parichaya (Introduction to dosha, dhatus and mala) iii. Agni- koshta swarup (Concept of digestive fire and bowel habits) iv. Rasa, virya, vipaka prabhav guna parichaya (Introduction to rasa, virya, vipaka, prabhav and guna) v. Rog-aarogya swarup (Concept of health and disease) vi. Roga-aatur parikshan (Assessment of disease and diseased) vii. Desha and kaala parichaya (Introduction to habitat and time) viii. Chikitsa bheda (Types of treatment) ix. Pada chatushtaya Swaroopam (Concepts of four factors of treatment) x. Vyadhi sadhyasadhyatva (Types of prognosis)	1		08	03

	xi. Recitation of important shlokas				
3.	AH Su.2. Dinacharya Adhyaya- i. Dinacharya vihaar (Importance of various regimen in Dinacharya) ii. Shuddhi Niyam (Personal hygiene) iii. Dharmapalan evam sadvrutta palan iv. Recitation of important shloka	1		05	04
4.	AH Su.3. Rutucarya Adhyaya- i. Shadrutu (Classification of seasons according to Uttarayan and Dakshinayan) ii. Rutucharya (detailed regimen of the six seasons) iii. Rutusandhi (inter-seasonal period) iv. Recitation of important shlokas	1		05	04
5.	AH Su.4. Roganutpadaniya Adhyaya- i. Adharaneeya vega and chikitsa (symptoms arising due to suppression of natural urges and their treatment) ii. Dharneeya vega (Concept of urges which hav eto be suppressed) iii. Shodhan chikitsa (Importance of purification treatments) iv. Hita-aahar-vihar sevan (Importance of following healthy lifestyle) v. Recitation of important shlokas	I		05	04
6.	AH Su.5. Dravadravya Vijnaniya Adhyaya- i. Jala Varga (Water from different sources, various states of water) ii. Dugdha Varga (Milk and milk products) iii. Ikshu Varga (Sugarcane and its products) iv. Madhu varnana (Properties of honey) v. Tail Varga (Oils of various sources) vi. Madya Varga (Types of alcoholic beverages) vii. Mutra Varnana (Types of urine) viii. Recitation of important shlokas	I		05	04
7.	AH Su.6. Annaswaroopa Vijnaneeya Adhyaya- i. Shuka- DhanyanamSamanya Gunah (Properties of various types of cereals)	II		05	03

	<ul style="list-style-type: none"> ii. Shimbi- Dhanyananam Samanya Gunah (Properties of various types of Pulses) iii. Mamsasya Samanya Gunah (Properties of meat of various animals) iv. Shakayoh Samanya Gunah (Properties of various types of vegetables) v. Phalayoh Samanya Gunah (Properties of various types of Fruits) vi. Kritanna varganam Samanya Gunah (Properties of various types of cooked food) vii. Aushadhanam Samanya Gunah (Properties of various types of medicinal herbs) 				
8.	<p>AH Su.7. Annaraksha Adhyaya-</p> <ul style="list-style-type: none"> i. Rajnikate- Vaidyasthiti (Important place of Vaidya in Kings palace) ii. Savishanna Lakshanam (Properties of poisoned food) iii. Savishanna Pariksha (Examination of food contaminated with poison) iv. Savishanna-Lakshana- Aushadha (Signs of food poisoning and its treatment) v. Viruddha Aahar (Incompatible food and food practices) vi. Satmikaran Krama (Method of adaptation of wholesome food habits and to taper unwholesome food habits) vii. Aahar-Shayan-Abrahmacharya – Trayopasthambha (Three accessory pillars of Health) viii. Recitation of important shlokas 	II		04	03
9.	<p>AH Su.8. Matrashitiya Adhyaya-</p> <ul style="list-style-type: none"> i. AaharMatra (appropriate quantity of food) ii. Heen-matra, ati-matra bhojan dosha (Demerits of excess and less quantity of food) iii. Alasak, Visuchika (Etiopathogenesis and management principles of Vishuchika and Alasak) iv. Apatarpan chikitsa 	II		05	04

	<ul style="list-style-type: none"> v. Types of Ajeerna (indigestion) and its causes vi. Bhojan-samyak yog (Ideal regimen and time for taking food) vii. KukshiVibhag (Imaginary parts of the stomach) viii. Details of Anupan (Liquid consumed along with or after food) ix. Recitation of important shlokas 				
10	<p>AH Su.9. Dravyaadi Vijnaniya Adhyaya-</p> <ul style="list-style-type: none"> i. Dravya shreshthtva(Predominance of Dravya) ii. Dravyasya panchbhautikatvam (Prevalence of Panchamahabhutas in dravyas) iii. Panchbhautik dravyanaam guna(Characteristics of PanchabhautikDravyas) iv. Principles of dravyas viz Veerya- Vipaka- Prabhava v. Recitation of important shlokas 	II		04	04
11	<p>AH Su.10. Rasabhedhiya Adhyaya-</p> <ul style="list-style-type: none"> i. Shadrasanaam utpatti (Origin of Shadrasa) ii. Shadrasa parichaya (Identity of Six Rasas) iii. Shadrasa karma, guna, atiyoga lakshana (Functions, properties and presentation of excessive intake of Six Rasas.) iv. Recitation of important shlokas 	II		05	04
12	<p>AH Su.11. Doshadi Vijnaniya Adhyaya-</p> <ul style="list-style-type: none"> i. Importance of dosha dhatu mala ii. Dosha dhatu mala prakruta and vaikruta karma (normal and abnormal functions) iii. Dosha dhatu mala ashraya- ashrayi bhava (relation between dosha and dhatus) iv. Samanya chikitsa siddhanta for dosha dhatu mala vrudhhi kshaya (treatment principles) v. Agni (Digestive fire) vi. General pathophysiology for origin of diseases vii. Ojus (Essence of dhatus) 	III		08	05

	viii. Vriddhi-kshaya bshesaja ix. Recitation of important shlokas				
13	AH Su.12. Doshabhedhiya Adhyaya- i. Dosha and dosha bheda (Dosha and their types) ii. Dosha chaya, prakopa, prasham karanani (Causes of dosha accumulation, aggregation and alleviation) iii. Trividhakarana (three causative factors of disease) iv. Trividha Roga marga (three pathways of disease) v. Aatura parikshbhaav (assessment methods) vi. Recitation of important shlokas	III		08	05
14	AH Su.13. Doshopakramaniya Adhyaya- i. Tridosha- upakrama (Treatment principles of vitiated doshas) ii. Shuddha-ashuddha chikitsa lakshana (Accurate and inaccurate treatment) iii. Dosha gati (movement of doshas inside the body) iv. Concept of aama v. Dasha aushadha-kaala (ten types of times for administering medicines) vi. Recitation of important shlokas vii. Research Updates – Langhan : Fasting and autophagy induction – how cell recycle and renew their content, a process called autophagy.	III		07	06
15	AH Su.14. Dvididhopakramaniya Adhyaya- i. Concept of Langhan and Brihan therapies (Treatment procedures for making the body thin and for nourishment) ii. Concept of Shodhan and shaman therapies (Purification and palliative treatments) iii. Concept of Atistaulya and atikarshya (Obesity and emaciation) iv. Recitation of important shlokas	III		05	05

16	AH Su.15. Shodhanadigana Sangraha Adhyaya- i. Groups of dravyas according to specific action ii. Groups of dravyas according to major ingredient as well as action	III		02	04
Charak Samhita – Sutrasthan (1-12 Adhyaya):			50 marks		
17	Ch S Su 1. Deerghanjiviteeya Adhyaya- i. Ayurvedavataranam (Genealogy of Ayurveda) ii. Arogsya chaturvarge pradhanam karanam iii. Trisutra Ayurveda iv. Details of Shat padartha v. Ayurvedasya lakshanam tatha prayojan vi. Ayusho lakshanam paryayashcha vii. Samanyavisheshayorlakhanam viii. Tridanda ix. Vyadhinam trividho hetusamgrah x. Vyadhinam ashraya tatha Arogsya karanam xi. Atmano lakshanam xii. Details about Sharira and manas dosha xiii. Sadhyaasadhyata vikara chikitsa xiv. Rasa varnanam xv. Dravya bheda xvi. Aushadhinam nama-rupa-upyog gyan xvii. Bhishagbubhushoh kartavyam xviii. Yuktasya bhaishajyasya lakshanam xix. Bhishaktamasya lakshanam xx. Recitation of important shlokas	1		07	02
18	Ch S Su 2. Apamarga Tanduliya Adhyaya- i. Shiro Virechana Dravya & Main Indications ii. Vamana Dravya & Main Indications iii. Virechana Dravya & Main Indications iv. Asthapana Dravya & Main Indications	II		02	03

	<ul style="list-style-type: none"> v. Anuvasana Dravya & Main Indications vi. Ashtavimshathi Yavagu vii. Panchakarma Mahatwa & Vaidya Guna viii. Recitation of important shlokas 				
19	<p>Ch S Su 3. Aragvadhiya Adhyaya-</p> <ul style="list-style-type: none"> i. Dwa Trimshath Churna Pradeha & Main Indications 	II		01	03
20	<p>Ch S Su 4. Shadvirechana-shatahritiya Adhyaya-</p> <ul style="list-style-type: none"> i. Shadvirechan aashrya ii. Panchkashaya yoni iii. Panchvidh kashaya kalpana iv. Panch kashaya shatani 	II		03	04
21	<p>Ch S Su 5. Matrashiteeya Adhyaya-</p> <ul style="list-style-type: none"> i. MatravatAhara ii. Nature of Ahara (Guru, Laghu) iii. AharaMatra iv. MatravatAharaPhala v. AharaSevanaVidhana on the bases of its nature vi. Swasthavrutta vii. Anjana viii. Dhumapana ix. Nasya x. Dantadhavana xi. Jivhanirlekhana xii. Gandusha xiii. Abyanga xiv. Parimarjana xv. VastraGandhaMalyadiDharana xvi. Shouchavidhi xvii. Kshoura Karma xviii. PadatraDharana xix. ChatraDharana xx. Important Shlokas for recitation xxi. Research Updates: Role of Dinacharya to maintain circadian rhythm Role of therapeutic message for cell rejuvenation Mechanism of satiation and proper quantity of food (Sauhitya Matra) 	II		03	05

22	<p>Ch S Su 6. Tasyashiteeya Adhyaya-</p> <ol style="list-style-type: none"> i. Classification Samvastara ii. Visarga Kala iii. Adana kal;a iv. Shadrutuvivechana and Charya v. Hamsodaka vi. Saatmya vii. Important shlokas for recitation viii. Research Updates: What causes the season: Summer and winter solistice- Equinoxes- Rotation of earth around sun. 	II		04	04
23	<p>Ch S Su 7. Naveganadharaniya Adhyaya-</p> <ol style="list-style-type: none"> i. Adharneeya-Dharneeya vega lakshan, chikitsa ii. Vyayam (Details regarding exercise) iii. Ahita sevan evam varjya vidhi iv. Deha prakruti (Body constitution) v. Agantuja evam Pradnyaapradh janya vyadhi evam chikitsa vi. Impotant Shlokas for recitation vii. Research Updates: Corelation of genomic variation with the classification of Prakriti 	II		04	04
24	<p>Ch S Su 8. Indriyopakramaniya Adhyaya-</p> <ol style="list-style-type: none"> i. Enumeration of Indriya, Dravya, Adhishthana, Artha, Buddhi ii. Manas Lakshana iii. Ekatvam of Manas iv. Sattvikatva, Rajasatva and Tamasatva of Manas v. Indriya PanchaPanchaka vi. Adhyatma Dravya Guna Sangraha vii. Mahabhuta – Indriya sambandh viii. Prakriti – Vikriti hetu ix. SadvrittaAnushthana x. Hetuchatushtaya xi. AnuktaSadvritta xii. Important Shlokas for Recitation xiii. Research updates: Mental health and gut microbiota. 	II		04	03
25	<p>Ch S Su 9. Khuddakachatushpada Adhyaya-</p> <ol style="list-style-type: none"> i. Chikitsa Chatushpada ii. Roga-Arogya Lakshana 	II		03	03

	<ul style="list-style-type: none"> iii. Chikitsa Lakshana iv. Vaidya, Dravya (Bheshaja), Paricharaka, Aatura guna v. Vaidya pradhanatva vi. Adnya chikitsak dosha vii. Sadvaidya lakshana viii. Vaidya kartavya ix. Vaidya Vritti x. Recitation of important Shlokas xi. Research Updates: Medical ethics-principles Soft Skill development for medical students Emotional Intelligence as a crucial component in medical education 				
26	<p>Ch S Su 10. Mahachatushpada Adhyaya-</p> <ul style="list-style-type: none"> i. Catuspaada-bheshajam alam aarogyaayeti (aatreya-krta) ii. Bheshaja-abheshajayo tulyatva pratipaadana – (maitreya-krta) iii. Its conclusion by Atreya iv. Pareekshya-kaarino hi kusalaa bhavanthi v. Cikitsaa sootram vi. Cikitsaayaam yasolaabhe kaaranam vii. Asaadhyaroga-cikitsaayaam haani viii. Further division of saadhya-asaadhyata ix. Sukha-saadhya lakshanam x. Krcchra-saadhya lakshanam xi. Yaapya lakshanam xii. Pratyakhyeya lakshanam xiii. Benefit of knowledge of prognosis xiv. The versatile usage of the term ‘mithyaa-buddhi’ xv. Recitation of important shlokas 	II		03	03
27	<p>Ch S Su 11. Tisraishaniya Adhyaya-</p> <ul style="list-style-type: none"> i. TrividhaEshana (Three Desires of life) ii. Paralokaeshana iii. Chaturvidhpariksha iv. Punarjanma siddhi by Chaturvidhapramanas v. Trayopasthambha vi. Trividhabala 	III		06	04

	vii. Trividhaayatana viii. Atiyoga, Heenayoga and Mithya yoga of artha, karma and kaala ix. Trividharoga x. Treatment for manasavyadhi xi. Trividharogamarga xii. Trividhavaidya xiii. Trividhaoushadha xiv. Ashtatrika xv. Important Shloka for Recitation				
28	Ch S Su 12. Vatakalakaliya Adhyaya- i. Vata guna ii. Views of various Acharyas on Vata dosha Guna avum Karma iii. Vayu prakop-prasham karan iv. Akupita, kupita vayu karma v. Vata Dosha – Clinical application vi. Akupita-kupita pitta karma vii. Akupita- kupita kapha karma viii. Atreya’s exploration on Tridosha ix. Important shloka for recitation	III		04	05 + 15 (for yearly competitions)
<ul style="list-style-type: none"> Note- In this column distribution of 130 activity is given. Remaining 130 is for Samhita Pathan. 					

Table 3: Learning objectives (Theory) of Course AyUG-SA1

AyUG-SA1 Learning Objective									
A3 Course outcome	B3 Learning Objective (At the end of the session, the students should be able to)	C3 Domain/s ub	D3 Must to know/ desirabl e to know/Ni ce to know	E3 Level Does/ Shows how/ Knows how/ Know	F3 T-L method	G3 Assessment	H3 Formati ve /summat ive	I3 Te rm	J3 Integra tion
Topic 1- Introduction To Samhitas: Time (Lecture:-15 ; Non lecture:-09 hours)									
CO1	Explain the term Samhita	Cognitive/ Comprehe nsion	Must know	Knows	Lecture	Written or Viva	F & S	I	
CO1	Identify Bruhatrayee	Cognitive/ Recall	Must know	Knows	Lecturer	Written or Viva	F & S	I	
CO1	Discuss the various Samhitas and Commentaries in brief	Cognitive/ Comprehe nsion	Must know	Knows	Lecturer / Group Discussion	Written or Viva	F & S	I	
CO1	Discuss the various preceptors, aut hours, redactors and commentators in brief	Cognitive/ Comprehe nsion	Must know	Knows	Lecturer	Written or Viva	F & S	I	
CO1	Apply various Tantrayukties like Adhikaran, Yoga, Padarth, Uddesh, Nirdesh, Vaakyashesh, Prayojan, Upadesh, arthapatti, Ekant,	Cognitive/ Applicatio n	Must know	Knows how	Lecturer/ Group discussion	Viva	Formativ e	I	

	Anumat, Vyakhyan, Samsay, Atitavekshan, Anagatavekshan, Swasadnya, Samucchaya, Nidarshan, Nirvachan, Niyog.								
CO1	Describe various Tantraguna	Cognitive/Comprehension	Must know	Knows how	Lecturer	Written or Viva	Formative and Summative	I	
CO1	Describe various Tantradosha	Cognitive/Comprehension	Must know	Knows	Lecturer	Written or Viva	Formative and Summative	I	
CO1	Describe rachanashaili (composition style) and bhashashaili (language style) of Samhitas	Cognitive/Comprehension	Must know	Knows how	Lecturer / Discussion	Written or Viva	F & S	I	<u>Ayurved Itih as</u>
CO1	Discuss about pattern (method) of writing of classical texts	Cognitive / Comprehension	Must know	Knows how	Lecturer	Puzzle	Formative	I	<u>Ayurved Itih as</u>
CO1	State different types of styles of language of classical text	Cognitive/Recall	Must know	Knows	Lecturer Audio-Visual aids	Viva	Formative and summative	I	
CO1	Interpret Anubandha chatushtya with examples	Cognitive/Problem solving	Must know	Knows how	Lecturer / Class discussion	Enquiry Based Learning	Formative	I	

CO1	Interpret Ashta Prashna with example	Cognitive/ Problem solving	Must know	Knows how	Lecturer/ Demonstration	Enquiry Based Learning	Formative	I	
Topic 2- Ashtang Hriday Samhita Sutrasthan Chapter-1- Ayushkamiya Adhyaya: Time (Lecture:- 08 ; Non lecture- 03 hours)									
CO1	Discuss the hierarchy of Ayurvedotpatti (descend of Ayurveda)	Cognitive /Recall	Must know	Know	Lecture	Written or Viva	F & S	I	
CO1	Explain the significance of Ashtanga Hrudaya	Cognitive /Recall	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO1	Enlist the eight branches of Ayurveda	Cognitive/ Recall	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO3	Discuss the concept of dosha with respect to qualities (guna), location in body and time period (kaala)	Cognitive/ comprehension	Must know	Knows how	Lecture and Group Discussion	Written & Viva	F & S	I	
CO3	Discuss role and superiority of dosha in manifestation of diseases	Cognitive/ comprehension	Must know	Knows how	Lecture/ Group discussion	Written & Viva	F & S	I	
CO3	Identify the dosha sthanas	Cognitive/ comprehension	Must know	Knows how	Discussion	Model Making (Working Model)	Formative	I	
CO3	Enlist the saptadhatus and mala.	Cognitive/ Recall	Must know	Know	Lecture	Written & Viva	F & S	I	
CO4	Explain the concept of Samsarga (combination of 2 dosha) & Sannipata	Cognitive/ Comprehension	Must know	Knows how	Lecture	Written & Viva	F & S	I	

	(combination of 3 dosha)								
CO4	Elucidate concept of Prakruti (body constitution)	Cognitive/Comprehension	Must know	Knows how	Lecture/Discussion	Written & Viva	F & S	I	
CO6	Explain the three types of digestive fire (agni)	Cognitive/Comprehension	Must know	know How	Lecture/Demonstration in healthy volunteers.	Written or Viva	F & S	I	
CO6	Describe the three types of Koshtha	Cognitive/Comprehension	Must know	Knows how	Lecture/Demonstration in healthy volunteers.	Written or Viva	F & S	I	
CO5	Explain the effect of rasas on tridosha	Cognitive/Comprehension	Must know	Knows how	Lecture/ Group discussion	Written & Viva	F & S	I	
CO5	Describe the two types of potencies (Dwividha Virya)	Cognitive/Comprehension	Must know	Knows how	Lecture/ Group discussion	Written & Viva	F & S	I	
CO5	Describe the three types of Vipaka	Cognitive/Comprehension	Must know	Knows how	Lecture/ Group discussion	Written & Viva	F & S	I	
CO5	Explain the three types of dravya on the basis of Prabhav	Cognitive/Comprehension	Must know	Knows how	Lecture/ Group discussion	Written & Viva	F & S	I	
CO5	Explain the concept of Vruddhi & Kshaya (increase and decrease)	Cognitive/Comprehension	Must know	Knows how	Lecture/ Group discussion	Written & Viva	F & S	I	

CO6	Discuss the causative factors of health and disease	Cognitive/comprehe nsions	Must know	Know how	Lecture/group discussion	Puzzle / Viva	Formative and summative	I	
CO6	Define health (aarogya) and disease stage(roga)	Cognitive/ Recall	Must know	Know	Lecture	Written & Viva	Formative and summative	I	
CO6	Explain prakruta (normal) and vikruta (abnormal) conditions	Cognitive/comprehe nsions	Must know	Knows how	Lecture	Written & Viva	Formative and summative	I	
CO6	Explain the types of diseases (Roga)	Cognitive/ Comprehe nsion	Must know	knows How	Lecture	Written or Viva	F & S	I	
CO6	Explain the concept of Roga Adhishthana (abode of diseases)	Cognitive/ Cognitive/ Comprehe nsion	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO6	Enumerate Manas dosha	Cognitive/ Recall	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO6, CO8	Discuss the methods of assessment of patient	Cognitive/ Comprehe nsion	Must know	Knows How	Lecture	Written or Viva	F & S	I	
CO8	Explain the methods of examination of disease	Cognitive/ Comprehe nsion	Must know	Knows how	Lecture/OPD clinics	Written & Viva	F & S	I	
CO6	Explain the three types of habitats(desha)	Cognitive/ Comprehe nsion	Must know	Knows how	Lecture/Multimedia aids	Written or Viva	F & S	I	

CO6	Explain the two types of Bhesaja Kala	Cognitive / Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO6	Explain the Classification the treatment modules (Aushadha)	Cognitive / Comprehension	Must know	Know How	Lecture	Written or Viva	F & S	I	
CO6	Explain the treatment module for mental diseases (Mano Dosh Aushadham)	Cognitive / Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO6, CO8	Elaborate chikitsa chatuspada (4 factors in treatment)	Cognitive /Comprehension	Must know	Know How	Lecture/ Demonstration in hospital	Written or Viva	F & S	I	
CO6	Explain the types of prognosis of disease	Cognitive/ Comprehension	Must know	Know How	Lecture/ Demonstration on patients / Multimedia aids	Written or Viva	F & S	I	
CO6	Explain Concept of anupakramaneeya Atura Lakshana	Cognitive/ Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO1	Enlist the chapters of Sutra Sthana	Cognitive/ Comprehension	Must Know	Knows	Self-learning	Written or Viva	F & S	I	
CO1	Enlist all Sthana and Adhyayas of Ashtang Hridaya and Uttara Tantra	Cognitive/ Recall	Nice to Know	Knows	Self-learning	Written or Viva	F & S	I	
CO2	Recite the shloka from 1 to 35	Cognitive/ Recall	Must Know	Show	Self-learning	Viva	F & S	I	
CO1	Identify Adhikaran, Yoga, Padarth, Uddesh,	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	I	

	Anagatavekshan Tantrayukti in this chapter.								
Topic -3. Ashtang Hriday Samhita Sutrasthan Chapter-2- Dinacharya Adhyaya Time (Lecture:- 05 Non lecture- 04 hours)									
CO4	Explain the need of waking up before sunrise	Cognitive/ Comprehe nsion	Must know	Know how	Lecture	Written & Viva	F & S	I	
CO4	Explain the importance of Shaucha Vidhi	Cognitive/ Comprehe nsion	Must know	Knows how	Lecture	Written & Viva	F & S	I	
CO4	Explain the importance and contraindications of brushing (Dantadhavana)	Cognitive/ Comprehe nsion	Must know	Knows how	Lecture/ Multimedia aids	Written & Viva	F & S	I	
CO4	Identify the herbs used for Dantadhavan	Cognitive/ Applicatio n	Must know	Shows how	Herbal garden visit	Written or Viva Group Activity (For identifications of Currently using tooth paste. Herbal pastes. Types of pastes)	F & S	I	Dravya guna dept
CO4	Distinguish Sauveeranjana and Rasanjan	Cognitive/ Comprehe nsion	Must know	Know how	Lecture/Demonstratio n	Written or Viva Debate (Students will search benefits and harms supported by current literature. Dabate in class)	F & S	I	Visit to Rasash astra dept for Identifi cation of drugs

CO4	Discuss contraindications of betel leaf consumption (Tambula)	Cognitive/ Application	Must know	Know how	Lecture/ Debate on benefits and harms of Betel leaf consumption. supported by current literature.	Written or Viva	F & S	I	
CO4	Elaborate the concept of Abhyanga along with contraindications	Cognitive/ Comprehension	Must know	Know How	Lecture/ /Multimedia aids	Written & Viva	F & S	I	Panchk arma dept
CO4	Discuss the importance, contraindications of exercise	Cognitive/ Application	Must know	Knows How	Lecture/ Multimedia aids	Written & Viva	F & S	I	
CO4	Discuss the rules regarding exercise and adverse effects of excessive exercise	Cognitive/ Application	Must know	Knows how	Group Discussion Debate: Types of Exercise. e.g Arobiuc and anaerobic etc. supported by current literature discussions on Concept.	Written & Viva	F & S	I	
CO4	Explain the benefits of powder massage (udvartan)	Cognitive/ Comprehension	Must know	Know how	Lecture/demonstration ECE	Written & Viva	F & S	I	Panchk arma dept
CO4	Elucidate the benefits and contraindications of bathing (snana)	Cognitive/ Comprehension	Must know	Knows how	Lecture/group discussion Literature search and Discussion by students.	Written & Viva	F & S	I	
CO4	Explain the time of having food.	Cognitive/ Comprehension	Must know	Know how	Lecture	Written or Viva	F & S	I	
CO4	Explain rules regarding natural	Cognitive/ Comprehension	Must know	Know how	Lecture	Written or Viva	F & S	I	

	urges.	nsion							
CO4	Explain the importance of righteousness (Dharmapalan)	Cognitive/Comprehension	Must know	Know how	Flipped Classroom Group Activity: self identification of Mistake they are doing Plan to rectify and reassessment after duration.(6 months)	Written or Viva	F & S	I	
CO4	Enumerate the types of bad deeds(Dasha Vidha Papakarma)	Cognitive/Recall	Must know	Know How	Flipped Classroom	Written or Viva	F & S	I	
CO4, CO8	Explain the concept of good principles and conduct (Sadvrutta)	Cognitive	Must know	Knows how	Flipped Classroom	Written or Viva	F & S	I	
CO4	Explain the principles of personal hygiene (shuddhi)	Cognitive/Comprehension	Must know	Knows how	Flipped Classroom	Written or Viva	F & S	I	
CO2	Recite the shlokas from 1 to 48	Cognitive/Recall	Must know	Show	Self-learning	MCQ/viva/quiz	F & S	I	
CO8	Assess and observe the Dincharya Principles.	Skill	Must know	Does	Proforma based assessment in healthy volunteers/ patients.	Work book- Viva	F & S	I	
CO8	Justify the importance of Dincharya	Cognitive/ Application	Must know	Does	Application of Principles in own life	Viva	F & S	I	
CO1	Identify Upadesh, Ekant, Prayojan Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	I	

Topic – 4. Ashtang Hriday Samhita – Sutrasthan Chapter 3- Rutucarya Adhyaya-Time (Lecture:- 05 ; Non lecture 04 hours)

CO4	Explain the six seasons and the months in which they fall	Cognitive/Comprehension	Must know	Knows	Lecture/group discussions/Multimedia aids	Written & Viva	F & S	I	
CO4	Elicudate the status of strength (bala) in Uttarayana and Dakshinayana	Cognitive/Recall	Must know	Knows How	Lecture/group discussions/Multimedia aids	Written & Viva	F & S	I	
CO4	Explain the relation between strength (bala)& seasons	Cognitive/Comprehension	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO4	Discuss the climatic conditions, health status(bala, agni, dosha), appropriate food and regimen for Hemant rutu.	Cognitive/Application	Must know	Knows How	Lecture/group discussions/Multimedia aids	Written or Viva	F & S	I	
CO4	Discuss the climatic conditions, health status (bala, agni, dosha), appropriate food and regimen for Shishira rutu.	Cognitive/Application	Must know	Knows How	Lecture/group discussions/Multimedia aids	Written & Viva	F & S	I	
CO4	Discuss the climatic conditions, health status (bala, agni, dosha), appropriate food and regimen for Shishira rutu.	Cognitive/Application	Must know	Knows How	Lecture/group discussions/Multimedia aids	Written or Viva	F & S	I	
	Discuss the climatic conditions, health status (bala, agni,	Cognitive/Application	Must know	Knows How	Lecture/group discussions/Multimedia aids	Written & Viva	F & S	I	

	dosha), appropriate food and regimen for Greeshma rutu.								
CO4	Discuss the climatic conditions, health status (bala, agni, dosha), appropriate food and regimen for Varsha rutu.	Cognitive/ Application	Must know	Knows How	Lecture/group discussions/Multimedia aids	Written & Viva	F & S	I	
CO4	Discuss the climatic conditions, health status (bala, agni, dosha), appropriate food and regimen for Sharad rutu.	Cognitive/ Application	Must know	Knows How	Lecture/group discussions/Multimedia aids	Written & Viva	F & S	I	
CO8	Justify the importance of Rutucharya	Affective	Must Know	Does	Group discussions	Viva	F & S	I	
CO4	Describe the special instructions pertaining diet (rasa, guna) and seasons	Cognitive/ Comprehension	Must know	Knows How	Lecture/group discussions/Multimedia aids	Written & Viva	F & S	I	
CO4	Identify the significance of Rutusandhi	Cognitive/ Comprehension	Must know	Knows How	Lecture	Written or Viva	F & S	I	
CO2	Recite the shloks - 1 to 6, 55-58	Cognitive/ Recall	Must Know	Show	Self learning	Written/viva/quiz	F & S	I	
CO4	Apply the Principles of Rutucharya in practice	Skill	Must Know	Does	Proforma based assessment of healthy individuals or patients	Viva	F & S	I	
CO1	Identify Prayojan, Swasdnaya, Apadesh Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	I	

Topic -5 Ashtang Hriday Samhita – Sutrasthan- Chapter 4. Roganutpadaniya Adhyaya--Time (Lecture:- 05 ; Non lecture 04 hours)

CO6	Enlist the adharaneeya vega (natural urges not to be suppressed by force)	Cognitive/ Recall	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO6	Specify the diseases due to suppression of adhovata (flatus) and its treatment	Cognitive/ Recall	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO6	Specify the diseases due to suppression of purisha (fecal matter/ defecation) and its treatment	Cognitive/ Recall	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO6	Specify the diseases due to suppression of mootra (urine) and its treatment	Cognitive/ Recall	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO6	Specify the diseases due to suppression of udgaar (belching) and its treatment	Cognitive/ Recall	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO6	Specify the diseases due to suppression of kshvathu (sneezing) and its treatment	Cognitive/ Recall	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO6	Specify the diseases due to suppression of trushna (thirst) and its treatment	Cognitive/ Recall	Must know	Knows How	Lecture	Written & Viva	F & S	I	

CO6	Specify the diseases due to suppression of kshudha (hunger) and its treatment	Cognitive/Recall	Must know	Knows How	Lecture	Written/viva	F & S	I	
CO6	Specify the diseases due to suppression of nidra (sleep) and its treatment	Cognitive/Recall	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO6	Specify the diseases due to suppression of kaasa (cough) and its treatment	Cognitive/Recall	Must know	Knows	Lecture	Written & Viva	F & S	I	
CO6	Enumerate the diseases due to suppression of shrama shwasa and its treatment	Cognitive/Recall	Must know	Knows	Lecture	Written & Viva	F & S	I	
CO6	Specify the diseases due to suppression of jrumbha (yawning) and its treatment	Cognitive/Recall	Must know	Knows	Lecture	Written & Viva	F & S	I	
CO6	Specify the diseases due to suppression of ashru (tears) and its treatment	Cognitive/Recall	Must know	Knows	Lecture	Written & Viva	F & S	I	
CO6	Specify the diseases due to suppression of vaman(vomiting) and its treatment	Cognitive/Recall	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO6	Specify the diseases due to suppression of shukra (semen) and its treatment	Cognitive/Recall	Must know	Knows How	Lecture	Written & Viva	F & S	I	

CO6	Describe the incurable condition of Vegadharan	Cognitive/Comprehension	Must know	Knows How	Lecture	Written or Viva	F & S	I	
CO6	Explain vegdharan as the root cause for many diseases and its common treatment	Cognitive/Comprehension	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO6	Explain the dharaneeya vega (urges to be controlled)	Cognitive/Comprehension	Must know	Knows How	Lecture/ Group discussion	Written or Viva	F & S	I	
CO8	Justify the importance of adharneeya and dharneeya vega to maintain health	Cognitive/ Application	Must know	Does	Group discussions	Group discussions/ Class activities	F & S	I	
CO6	Explain importance of Shodhana chikitsa (purification techniques)	Cognitive/Comprehension	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO6	Explain the importance of Brumhana after Shodhana chikitsa	Cognitive/Comprehension	Must know	Knows How	Lecture	Written & Viva	F & S	I	
CO6	Explain the concept of Aagantu roga (traumatic diseases) and its treatment	Cognitive/Comprehension	Must know	Knows How	Lecture	Written or Viva	F & S	I	
CO6	Discuss the concept of rutu-shodhana (elimination of doshas according to seasons)	Cognitive/ Application	Must know	Knows How	Lecture/Group Discussion	Written & Viva	F & S	I	

CO6 CO8	Describe the importance of healthy diet and regimen.	Cognitive/Comprehension	Must know	Knows How	Lecture/Group discussion	Written & Viva	F & S	I	
CO6	Comply with health rules regarding vegdharan and hita-aahar-vihar.	Cognitive/Comprehension	Must know	Shows		Group discussion/Class activities	F & S	I	
CO2	Recite the shlokas from number 1 to 22, 24-31, 35	Cognitive/Recall	Must know	Show	Self-learning	Written/viva/quiz	F & S	I	
CO3, CO6	Assess the sign and symptoms caused due to suppression of Adharaneeya Vegas.	Skill	Must Know	Show how	Proforma based assessment in healthy volunteers/patients.	Problem based assessment	Formative	I	
CO1	Identify Uddesh, Nirdesh, Tantrayukties in this chapter.	Cognitive/Application	Must know	Knows how	Lecturer/Group discussion	Viva	F & S	I	

Topic -6 Ashtang Hriday Samhita – Sutrasthan- Chapter 05 Dravadravya Vijnaniya Adhyaya--Time (Lecture:- 05 ; Non lecture 04 hours)

CO5	Differentiate between Gangambu (rain water) and Samudrambu (sea water)	Cognitive/Comprehension	Desirable	Knows	Lecture discussion	Written or Viva	Formative	I	
CO5	Describe attributes of water from different sources	Cognitive/Comprehension	Nice to know	Knows	Lecture discussion	Written or Viva	Formative	I	
CO5	Explain the utilities of different states of water (avoiding of drinking water, hot water (ushnambu), cold water	Cognitive/Comprehension	Must know	Knows how	Lecture discussion	Written or Viva	F & S	I	

	(sheetambu), Boiled and cold water (kwathita-sheetambu)								
CO5	Write the qualities of Narikelodakam (coconut water)	Cognitive/ Recall	Must know	Knows	Discussion	Written or Viva	F & S	I	
CO5	Discuss the properties of ksheeram (milk), Dadhi (curd), Takra (mastu), navaneetam (white butter), Ghritam	Cognitive/ Comprehension	Must know	Knows how	Lecture discussion	Written or Viva	F & S	I	
CO5	List Properties of milk (ksheeras) of different sources.	Cognitive/ Recall	Nice to know	Knows	Lecture	Written or Viva	Formative	I	
CO5	Differentiate the properties of ama (unboiled) and shruta (boiled) ksheeram (milk)	Cognitive/ Comprehension	Must know	Knows	Lecture	Written or Viva	F & S	I	
CO5	Explain the rules for curd consumption	Cognitive/ Comprehension	Must know	Know how	Lecture discussion	Written or Viva	F & S	I	
CO5	Write the properties of various milk preparations	Cognitive/ Recall	Nice to know	Know	Lecture discussion	Written or Viva	Formative	I	
CO5	Identify the properties and uses of sugarcane and its products	Cognitive/ Recall	Nice to know	Know	Lecture discussion	Written or Viva	F & S	I	
CO5	Enlist the properties of honey and Identify the various guidelines related to use of honey	Cognitive/ Recall	Must know	Knows how	Lecture discussion	Written or Viva	F & S	I	
CO5	Write the properties of tilaitailam (Sesame oil)	Cognitive/ Recall	Must know	Know	Lecture discussion	Written or Viva	F & S	I	

CO5	Identify the characteristics of different oils	Cognitive/Comprehension	Nice to know	Know	Lecture discussion	Written or Viva	Formative	I	
CO5	Classify various types of madyas (wines)	Cognitive/Comprehension	Nice to know	Know	Lecture discussion	Written or Viva	Formative	I	
	explain the properties of Shukta, Dhanyamlam, sauveeraka, tushodaka etc.,	Cognitive/Comprehension	Nice to know	Know	Lecture discussion	Written or Viva	Formative	I	
CO5	Describe the properties and uses of various types of urine	Cognitive/Comprehension	Nice to know	Know	Lecture discussion	Written or Viva	Formative	I	
CO2	Recite the shlokas- 1,16-17, 20,29-32, 51,52,56	Cognitive/Recall	Must know	Show	Self-learning	Written or Viva	F & S	I	
CO5	Classify some common dravyas like milk, ghee, sugar, jaggery etc according to their varga (group) and qualities	Skill	Must know	Show how	class Discussion	Viva/ class activities	F & S	I	
CO1	Identify Vaakyashesh, Samucchaya, Yog Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	I	

Topic -7 Ashtang Hriday Samhita – Sutrasthan- Chapter 6. Annaswaroopa Vijnaneeya Adhyaya- Time (Lecture:- 05 ; Non lecture 03 hours)

CO5	To classify the shukadhanya (cereals)	Cognitive/Recall	Must know	Know	Lecture	Written or Viva	F & S	II	Dravyaguna
CO5	Enumerate the qualities of each shukadhanya (cereals)	Cognitive/Recall	Desire to know	Know	Lecture	Written or Viva	Formative	II	Dravyaguna
CO5	Classify the shimbidhanya (pulses)	Cognitive/Recall	Must know	Know	Lecture	Written or Viva	F & S	II	Dravyaguna

CO5	Enumerate the qualities of each shimbi dhanya (pulses)	Cognitive/ Recall	Desire to know	Know	Lecture discussion	Written or Viva	Formative	II	Dravyaguna
CO5	Enumerate the qualities of various types of mamsa (meat)	Cognitive/ Recall	Nice to know	Knows	Lecture discussion	Written or Viva	Formative	II	
CO5	Enumerate the qualities of various types of shaka	Cognitive/ Recall	Must know	Knows	Lecture discussion	Written or Viva	Formative and summative	II	Dravyaguna
CO5	Enumerate the qualities of various types of fruits	Cognitive/ Recall	Desire to know	Knows	Lecture discussion	Written or Viva	Formative	II	Dravyaguna
CO5	Enumerate the qualities of various types of krtannavarga (cooked food)	Cognitive/ Recall	Must to know	Know	Lecture discussion	Written or Viva	Formative and summative	II	Bhaishajy akalpana
CO5	Enumerate the qualities of various types of medicinal dravyas (herbs)	Cognitive/ Recall	Must know	Knows	Lecture discussion	Written or Viva	F & S	II	Dravyaguna
CO5	Classify certain common dravyas according to varga and functions	Skill	Must know	Show how	Group activities	Viva	F & S	II	
CO1	Identify Samucchaya, Prayojan, Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	II	
Topic -8 Ashtang Hriday Samhita – Sutrasthan- Chapter 7. Annaraksha Adhyaya- Time (Lecture:- 04 ; Non lecture 03 hours)									
CO8	Describe the role of Rajavaidya (Noble Physiian)	Cognitive/ Comprehension	Nice to know	Know	Discussion	Written or Viva	Formative	II	

CO6	Identify the characteristics adulterated food stuffs	Cognitive/Comprehension	Nice to know	Knows	Discussion	Written or Viva	Formative	II	Agadatant ra
CO6	Describe the symptoms caused by poisoned or adulterated food	Cognitive/Comprehension	Desire to know	Know	Discussion	Written or Viva	Formative	II	Agadatant ra
CO6	Discuss the treatment module for poisoning	Cognitive/Comprehension	Desire to know	Know how	Discussion	Written or Viva	Formative	II	Agadatant ra
CO6	Define virudhahara (incompatible foods) with examples	Cognitive/Recall	Must know	Know	Lecture discussion	Written & Viva	F & S	II	
CO6	Discuss the treatment methods for virudhahara (incompatible foods)	Cognitive/Comprehension	Must know	Know how	Lecture discussion	Written & Viva	F & S	II	
CO6	Follow the principles regarding viruddh aahar	Cognitive/Application	Must know	Know how	Discussion	Class Activities	Formative	II	
CO4	Explain the process of satmikaran (accustomization)	Cognitive/Comprehension	Must know	Know how	Lecture discussion	Written & Viva	F & S	II	
CO4	Explain the three accessory pillars of life (diet, sleep and non-celibacy)	Cognitive/Comprehension	Must know	Know how	Lecture discussion	Written & Viva	Formative	II	
CO4	Explicate the significance of judicious sleep	Cognitive/Comprehension	Must know	Know how	Discussion	Written & Viva	F & S	II	
CO2	Recite the shloka- 45, 48, 50, 53-55	Cognitive/Recall	Must know	Shows	Self-learning	Written or Viva	F & S	II	
CO1	Identify Nidarshan, Samucchay, Prayojan,	Cognitive/Application	Must know	Knows how	Lecturer/Group discussion	Viva	F & S	II	

	swasadnya Tantrayukties in this chapter.								
Topic -9 Ashtang Hriday Samhita – Sutrasthan- Chapter 8. Annaraksha Adhyaya- Time (Lecture:- 05 ; Non lecture 04 hours)									
CO4	Explain the importance of matra (proper quantity of food) for maintenance of health	Cognitive/Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	II	
CO4	Describe how to quantify food	Cognitive/Comprehension	Must know	Knows	Lecture	Written or Viva	F & S	II	
CO4	Determine the adverse effects of heena matra (inadequate quantity of food) and atimatra (excess quantity of food) ahara	Cognitive/Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	II	
CO6	Discuss the etiopathogenesis, symptoms and treatment principles of Alasaka and Visuchika.	Cognitive/Application	Must know	Knows how	Lecture/PBL	Written or Viva	F & S	II	
CO6	Classify between various types of Apatarpan therapies	Cognitive/Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	II	
CO6	Classify various types of ajeerna	Cognitive/Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	II	
CO6 , CO4	Enlist unwholesome food items	Cognitive/Recall	Must know	Knows	Group discussion	Written or Viva	F & S	II	
CO4	Identify various unhealthy food habits	Cognitive/Comprehension	Must know	Knows	Group discussion	Written or Viva	F & S	II	

CO4	Recommend ideal regimen for consumption of food (aaharvidhi)	Cognitive/Comprehension	Must know	Knows how	Discussion	Written or Viva	F & S	II	
CO4	Differentiate between the food items recommended and non-recommended for daily use	Cognitive/Comprehension	Must know	Knows	Lecture Group Activity.	Written or Viva	F & S	II	
CO4	Advise the right order of food items in a meal	Cognitive/Application	Must know	Does	Discussion/activities	Viva/ proforma activity	F & S	II	
CO4	Select anupanas (after drink) based on ahara and aushadha	Cognitive/Comprehension	Must know	Knows how	Lecture/Discussion	Written or Viva	F & S	II	
CO4	Identify the conditions where Anupan is contraindicated	Cognitive/Comprehension	Desire to know	Knows	Lecture/Discussion	Written or Viva	F & S	II	
CO4	Advise the right time of food consumption (Aahar Kala)	Cognitive/Application	Must know	Shows	Lecture/Discussion/activities	Written or Viva	F & S	II	
CO2	Recite the shlokas-1-3, 6,7, 17, 19, 20,21, 25-30, 33-34	Cognitive/Recall	Must know	Shows	Self-learning	Written or Viva	F & S	II	
CO4	Justify the various principles of diet regarding quantity and time	Cognitive/Application	Must know	Does	Discussion/activities	Viva/activities	Formative/Summative	II	
CO1	Identify Prayojan, Upadesh, Padartha, Yog, Swasdnaya Tantrayukties in this chapter.	Cognitive/Application	Must know	Knows how	Lecturer/Group discussion	Viva	F & S	II	

Topic -10 Ashtang Hriday Samhita – Sutrasthan- Chapter 9. Dravyaadi Vijnaniya Adhyaya-Time (Lecture:- 04 ; Non lecture 04 hours)

CO5	Justify the predominance of Dravya	Cognitive/Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	II	
CO5	Elaborate the prevalence of Panchamahabhutas in Dravyas	Cognitive/Comprehension	Must know	Knows how		Written or Viva	F & S	II	
CO5	Differentiate between Rasa and Anurasa (primary taste and secondary taste)	Cognitive/Comprehension	Must know	Knows	Lecture	Written or Viva	F & S	II	
CO5	Analyse the characteristics of Panchabhautik dravyas	Cognitive/Application	Must know	Shows	Lecture	Written or Viva	F & S	II	
CO5	Recognise the aushadatva (medicinal value) of all substances	Cognitive/Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	II	
CO5	Demonstrate the importance of Panchabhautikdravyas in restoration and continuation of health.	Cognitive/Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	II	
CO5	Explain the importance of Mahabhutas and drug action	Cognitive/Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	II	
CO5	Define Veerya and Vipaka	Cognitive/Recall	Must know	Knows	Lecture	Written or Viva	F & S	II	
CO5	Discuss the types and the various opinions related with Veerya.	Cognitive/Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	II	
CO5	Explain Vipaka and its types.	Cognitive/Comprehension	Must know	Knows	Lecture	Written or Viva	F & S	II	

CO5	Discuss the hierarchy of active principles of Dravya (matter)	Cognitive/Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	II	
CO5	Define Prabhava	Cognitive/Recall	Must know	Knows	Lecture	Written or Viva	F & S	II	
CO5	Recall the exemplified functions of various active principles	Cognitive/Recall	Must know	Knows	Lecture	Written or Viva	F & S	II	
CO5	Describe the Saman pratyayarabdha and Vichitra-praty-arabdha Dravyas.	Cognitive/Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	II	
CO2	Recite the shlokas – 1,2,3, 4,10, 12, 13, 20,26,27,28	Cognitive/Recall	Must know	Knows	Self-learning	Written , Viva/quiz	F & S	II	
CO1	Identify Swasdnya, Nirvachan Tantrayukties in this chapter.	Cognitive/Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	II	

Topic -11 Ashtang Hriday Samhita – Sutrasthan- Chapter 10. Rasabhedhiya Adhyaya- Time (Lecture:- 05 ; Non lecture 04 hours)

CO2	Describe the formation of rasa from mahabhoota	Cognitive/Comprehension	Must know	Know	Lecturer Audio-Visual aids	Written or Viva	Formative or Summative	II	Dravyaguna
CO2	Identify the examples and exceptions of the six rasa	Cognitive/Comprehension	Must know	Know	Lecturer Audio-Visual aids	Written or Viva	Formative or Summative	II	Dravyaguna
CO2	Explain the features of six rasa with examples and exceptions	Cognitive/Comprehension	Must know	Knows how	Lecturer Audio-Visual aids	Written or Viva	Formative or Summative	II	
CO2	Explain the functions of six rasa	Cognitive/Comprehension	Must know	Knows how	Lecturer Audio-Visual aids	Written or Viva	Formative or Summative	II	

CO2	Describe the symptoms due to excess use (atiyog) of the six rasa	Cognitive/Comprehension	Must know	Knows how	Lecturer Audio-Visual aids	Written or Viva	Formative or Summative	II	
CO2	Analyze the tartamatva of rasas (hierarchy of rasa on the basis of characteristics)	Cognitive/Application	Must know	Knows how	Lecturer Audio-Visual aids	Written or Viva	Formative or Summative	II	Dravyaguna
CO2	Enlist the 63 types of permutation and combination of rasa	Cognitive/Recall	Nice to know	Know how	Lecturer Audio-Visual aids	Written or Viva	F & S	II	Dravyaguna
CO2	Classify the dravyas according to the rasa skand (group)	Skill	Must know	Know how	Discussion/activities based proformas	Viva/Activities	F & S	II	
CO2	Recite the shloks-1-21, 33-38	Cognitive/Recall	Must know	Knows	Self-learning	Written or Viva	F & S	II	
CO1	Identify Uddesh, Nirdesh, Apavarga Tantrayukties in this chapter.	Cognitive/Application	Must know	Knows how	Lecturer/Group discussion	Viva	F & S	II	
Topic -12 Ashtang Hriday Samhita – Sutrasthan- Chapter 11. Doshadi Vijnaniya Adhyaya- Time (Lecture:- 08 ; Non lecture 05 hours)									
CO3	Discuss the importance of dosha dhatu mala	Cognitive/Application	Must know	Know how	Lecturer Audio-Visual aids	Written & Viva	Formative or Summative	III	
CO3	Explain dosha dhatu mala prakruta karma (normal functions)	Cognitive/Comprehension	Must know	Knows how	Lecturer Audio-Visual aids	Written & Viva	Formative or Summative	III	

CO3	Identify the normal functions of dosha, dhatu and mala	Skill	Must know	Show How	Activity based proformas	Viva/ through various Activities	Formative or Summative	III	
CO3	Explain dosha dhatu mala vaikruta (vrudhha and ksheena) karma (abnormal functions)	Cognitive/ Comprehe nsion	Must know	Knows how	Lecturer Audio- Visual aids	Written & Viva	Formative or Summative	III	
CO3	Identify the effects due to vrudhhi (increase) or kshaya (decrease) of dosha,dhatu and mala	Skill	Must know	Show How	Activity based proformas	Viva/ through various Activities	Formative or Summative	III	
CO3	Explain the relation between dosha and dhatu.	Cognitive/ Comprehe nsion	Must know	Know how	Lecturer Audio- Visual aids	Written & Viva	Formative or Summative	III	
CO5	Explain the treatment principles for vitiated dosha, dhatu and mala	Cognitive/ Comprehe nsion	Must know	Know how	Lecturer Audio- Visual aids	Written & Viva	Formative or Summative	III	
CO3	Elucidate the concept of agni	Cognitive/ Comprehe nsion	Must know	Know how	Lecturer Audio- Visual aids	Written & Viva	Formative or Summative	III	
CO3	Discuss Superiority of Jatharagni	Cognitive/ Applicatio n	Must know	Know how	Lecture, Discussion	Written & Viva	Formative or Summative	III	
CO3	Assess the status of Agni.	Skill	Must know	Shows	Activities	Viva/Activites	Formative or Summative	III	
CO6	Explain the general pathophysiology for origin of Diseases	Cognitive/ Comprehe nsion	Must know	Know how	Lecturer Audio- Visual aids	Written or Viva	Formative or Summative	III	

CO3 CO6	Explain the concept of Ojas	Cognitive/Comprehension	Must know	Know how	Lecture, Discussion	Written or Viva	Formative or Summative	III	
CO3 CO6	Explain aetiological factors for Ojakshaya	Cognitive/Comprehension	Must know	Know how	Lecturer	Written or Viva	Formative or Summative	III	
CO3 CO6	Explain Ojakshaya Lakshana	Cognitive/Comprehension	Must know	Know how	Lecture, Discussion	Written or Viva	Formative or Summative	III	
CO3 CO6	Identify Ojakshaya Lakshana	Skill	Must know	Show how	Lecturer Audio-Visual aids	Viva/activities	Formative or Summative	III	
CO5	Discuss general diet principles for vridhhi and kshaya (vitiated doshas)	Cognitive/ Application	Must know	Show How	Activity based proformas	Viva/ planned activities	Formative or Summative	III	
CO2	Recite shlokas from 1 to 45	Cognitive	Must Know	Knows	Self-learning	Written or Viva	Formative or Summative	III	
CO1	Identify Samucchaya, Adhikaran, Vakyashesh Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	III	
Topic -13 Ashtang Hriday Samhita – Sutrasthan- Chapter 12. Doshabhedhiya Adhyaya- Time (Lecture:- 08 ; Non lecture 05 hours)									
CO3	Enumerate the seats of vata, pitta and kapha doshas	Cognitive/ Recall	Must know	Knows	Lecturer Audio-Visual aids	Written or Viva	Formative or Summative	III	
CO3	Enlist types of vata, pitta and kapha dosha.	Cognitive/ Recall	Must know	Knows	Lecturer Audio-Visual aids	Written or Viva	Formative or Summative	III	
CO3	Describe the specific seats and functions of types of vata, pitta and kapha doshas.	Cognitive/ Recall	Must know	Knows	Lecturer Audio-Visual aids	Written or Viva	Formative or Summative	III	

CO3	Discuss the importance of types of vata, pitta and kapha doshas.	Cognitive/ Application	Must know	Knows how	Lecturer Audio-Visual aids	Written or Viva	Formative or Summative	III	
CO3	Identify the different types of dosha according to location and functions	Skill	Must know	Knows how	Proforma based activities	Written or Viva	Formative or Summative	III	
CO3	Elucidate the concept of Chaya (accumulation), Prakopa (aggravation) and Prashama (alleviation) of vata, pitta and kapha doshas.	Cognitive/ Comprehension	Must know	Knows how	Lecturer Audio-Visual aids	Written or Viva	Formative or Summative	III	
CO3	Discuss the impact of seasonal variation in accumulation and aggravation of vata, pitta and kapha doshas.	Cognitive/ Application	Must know	Knows how	Lecturer Audio-Visual aids/Discussion	Written or Viva	Formative or Summative	III	
CO3	Discuss the superiority of dosha in manifestation of diseases	Cognitive/ Application	Must know	Know how	Lecturer Audio-Visual aids/Discussion	Written or Viva	Formative or Summative	III	
CO3	Identify general aetiological factors responsible for manifestation of diseases	Cognitive/ Application	Must know	Know how	Lecturer/ Discussion	Written or Viva	Formative or Summative	III	
CO3	Describe Trividha Roga marga (pathways of diseases)	Cognitive/ Comprehension	Must know	Knows	Lecturer	Written or Viva	Formative or Summative	III	
CO3	Enlist various disorders of Trividha Roga marga (pathways of diseases)	Cognitive/ Recall	Must know	Knows	Lecturer/	Written or Viva	Formative or Summative	III	

CO3	Recognise the importance of concept of Trividha Roga marga in diagnosis and prognosis of diseases.	Cognitive/ Application	Must know	Knows how	Discussion	Written or Viva	Formative or Summative	III	
CO3	Enumerate the symptoms of aggravated Vata-Pitta – Kapha dosha	Cognitive/ Recall	Must know	knows	Lecture, Discussion	Written or Viva	Formative or Summative	III	
CO3	Identify the prakopa lakshana of dosha in various diseases	Skill	Must know	Show How	Discussion, Group activities	Written or Viva	Formative or Summative	III	
CO3	Explain the concept of unnamed diseases	Cognitive/ Comprehension	Must know	Knows how	Lecture, Discussion	Written or Viva	Formative or Summative	III	
CO3	Define svatantra and partantra vyadhi (primary and secondary diseases)	Cognitive/ Recall	Must know	Know	Lecture	Written or Viva	Formative or Summative	III	
CO3	Enumerate the types of assessment methods	Cognitive/ Recall	Must know	Know	Lecture, Discussion	Written or Viva	Formative or Summative	III	
CO3	Demonstrate the types of assessment methods.	Skill	Must know	Shows how.	Group Activities	Viva	Formative	III	
CO3	Explain the concept of Guru Vyadhit and LaghuVyadhit (gravity of disease and contrary presentation)	Cognitive/ Comprehension	Must know	Knows how	Lecture, Discussion	Written or Viva	Formative or Summative	III	
CO3	Enlist the 63 types of Permutation and combination of dosha	Cognitive/ Recall	Nice to know	Knows	lecture	Written or Viva	Formative or Summative	III	
CO2	Recite the shlokas 1-72	Cognitive/ Recall	Must know	Shows	Self-learning	Written, Viva/Quiz	F & S	III	

CO1	Identify Apadesh, Samucchaya Tantrayukties in this chapter Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	III	
Topic -14 Ashtang Hriday Samhita – Sutrasthan- Chapter 13 Doshopakramaniya Adhyaya-Time (Lecture:- 07 ; Non lecture 06 hours)									
CO3	Explain the therapeutic procedures and specific management of vata, pitta and kapha dosha	Cognitive/ Comprehension	Must know	Knows how	Lecture	Written or Viva	F & S	III	
CO6	Explain the seasonal regimen to be adopted in various combinations of vitiated Doshas	Cognitive/ Comprehension	Must know	Knows	Lecture/Group Discussions	Written or Viva	F & S	III	
CO6	Discuss the importance of treatment of doshas in accumulation stage	Cognitive/ Application	Must know	Knows how	Lecture/Group Discussions	Written or Viva	F & S	III	
CO6	Differentiate the accurate and inaccurate therapeutic procedures.	Cognitive/ Comprehension	Must know	Knows how	Lecture/Group Discussions	Written or Viva	F & S	III	
CO6	Elaborate the factors responsible for movement of doshas from koshta to shakha and shakha to koshta.	Cognitive/ Comprehension	Must to know	Knows how	Lecture	Written or Viva	F & S	III	
CO6	Elaborate the concept of tiryag-gatadosha (migration to other abodes) and its treatment principle.	Cognitive/ Comprehension	Must to know	Knows how	Lecture	Written or Viva	F & S	III	
CO6	Describe the line of treatment for SthaniDosh (native) and AagantuDosh (immigrant)	Cognitive/ Comprehension	Must to know	Knows how	Lecture	Written or Viva	F & S	III	

CO6	Explain the concept of Aama.	Cognitive/Comprehension	Must to know	Knows how	Lecture	Written or Viva	F & S	III	
CO6	Enumerate the symptoms of saam and niraam doshas.	Cognitive	Must to know	Knows	Lecture	Written or Viva	F & S	III	
CO6	Elaborate the symptoms of saamadasha and their treatment	Cognitive	Must to know	Knows	Lecture	Written or Viva	F & S	III	
CO6	Analyze the 10 types of aushadha sevan kaal (Time, Method and indications of administration of medicine).	Cognitive/ Application	Must to know	Knows how	Lecture/Discussion	Written or Viva	F & S	III	
CO2	Recite the shlokas-1-41	Cognitive/ Recall	Must know	Shows	Self-learning	Written or Viva	F & S	III	
CO1	Identify Swasadnya, Nidarshan, Uddesh, Nirdesh Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	III	
Topic -15 Ashtang Hriday Samhita – Sutrasthan- Chapter 14 Dvidividhopakramaniya Adhyaya-Time (Lecture:- 05 ; Non lecture 05 hours)									
CO6	Elaborate the concept of two types of therapies - Langhan and Brihan	Cognitive/ Comprehension	Must know	Know how	Lecture	Written or Viva	F & S	III	
CO6	Describe the indications, methods, benefits of Brihan and symptoms of excess Brihan	Cognitive/ Comprehension	Must know	Know how	Lecture/Discussion	Written or Viva	F & S	III	
CO6	Explain the indications, methods, benefits of Langhan and symptoms of excess Langhan	Cognitive/ Comprehension	Must know	Know how	Lecture/ Discussion	Written or Viva	F & S	III	

CO6	Describe the indications of shodhan and shaman therapies	Cognitive/Comprehension	Must know	Know how	Lecture	Written or Viva	F & S	III	
CO6	Elaborate the concept of Atisthauya with the treatment module	Cognitive/Comprehension	Must know	Know how	Lecture	Written or Viva	F & S	III	
CO6	Elaborate the concept of Atikarshya with the treatment module	Cognitive/Comprehension	Must know	Know how	Lecture	Written or Viva	F & S	III	
CO2	Recite the shlokas – 1 to 7, 31 to 36	Cognitive/Recall	Must know	Shows	Self-learning	Written or Viva	F & S	III	
CO1	Identify Nirvachan, Samucchay, Nidarshan Tantrayukties in this chapter.	Cognitive/Application	Must know	Knows how	Lecturer/Group discussion	Viva	F & S	III	
Topic -16 Ashtang Hriday Samhita – Sutrasthan- Chapter 15, Shodhanadigana Sangraha Adhyaya- Time (Lecture:- 02 ; Non lecture 04 hours)									
CO7	Select the vaman, virechan, niruha, nasya gana according to their functions	Cognitive/Comprehension	Nice to know	Knows how	Lecture/Multimedia aids	Viva	Formative	III	Dravyaguna
CO7	Define the dravyas with their ingredients and actions.	Cognitive/Recall	Nice to know	Know	Lecture/Multimedia aids	Viva	Formative	III	
CO7	Identify the dravyas frequently used in treatments	Skill	Nice to know	Shows	Herbal garden visit	Viva	Formative	III	
Topic-17. Charak Samhita Sutrasthan Chapter 1. Dirghamjivitiyam Adhyaya; Time (Lecture:- 07 ; Non lecture 02 hours)									
CO1	Discuss the Ayurvedavatanam (Genealogy of Ayurveda)	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO8	Discuss the chaturvarga and its main factor for achieving it	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	

CO6	Discuss about the trisutra of Ayurveda (three principles of health and disease)	Cognitive	Must know	Know how	Lecture	Written or Viva	F & S	I	
CO2	Discuss the about the six padarthas (six basic principles)	Cognitive	Must know	Know how	Lecture	Written or Viva	F & S	I	
CO1	Discuss the characteristics of Ayurveda	Cognitive	Must know	Know how	Lecture	Written or Viva	F & S	I	
CO2	Discuss the characteristics of Ayu (life) and its synonyms	Skill	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO2	Discuss the characteristics of samanya (similarity) and visha (difference/uniqueness)	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO2	Discuss about the Tridanda (tripod of life)	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO2	Discuss the classification and characteristics of the dravyas (basic elements)	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO2	Discuss the classification and characteristics of the gunas	Cognitive	Must know	Show How	Lecture	Written or Viva	F & S	I	
CO2	Define karma (actions)	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO2	Explain samavaya (inseparable concomitance)	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO1	Explain the aims of Ayurveda	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	

CO6	Explain the three causative factors of disease	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO6	Explain the abode of vyadhi and arogya	Cognitive	Must know	Show how	Lecture	Written or Viva	F & S	I	
CO2	Discuss the characteristics of Atma	Cognitive	Must know	Know how	Lecture	Written or Viva	F & S	I	
CO6	Explain the sharira and manasa doshas	Cognitive	Must know	Know how	Lecture	Written or Viva	F & S	I	
CO6	Discuss the treatment of sharira and manasa doshas	Cognitive	Must know	knows How	Lecture	Written or Viva	F & S	I	
CO3	Discuss the gunas of vayu and its treatment	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO3	Discuss the gunas of pitta and its treatment	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO3	Discuss the gunas of shleshma and its treatment	Cognitive	Must know	Knows How	Lecture	Written or Viva	F & S	I	
CO6	Discuss about the treatment for sadhya and asadhya vikara (curable and incurable disease)	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO2	Explain the rasa	Cognitive	Must know	Knows how	Lecture	Written or Viva	F & S	I	
CO2	Classify the dravya based on their effects on body and their origin	Cognitive	Must know	Know how	Lecture	Written or Viva	F & S	I	
CO7	Enumerate the dravya based on the useful parts (upayuktanga)	Cognitive	Desirable to know	Know how	Lecture/Mul timedia aids	Written or Viva	F & S	I	
CO7	Discuss about the identification of drugs by name, form and its action	Cognitive	Must know	Know how	Lecture/Mul timedia aids	Written or Viva	F & S	I	

CO8	Discuss about the duties for one aspires to be a physician.	Cognitive	Must know	Know how	Lecture	Written or Viva	F & S	I	
CO7	Discuss about the best drug	Cognitive	Must know	Know how	Lecture	Written or Viva	F & S	I	
CO8	Discuss about the best physician endowed with all good qualities	Cognitive	Must know	Know how	Lecture	Written or Viva	F & S	I	
CO2	Recite the shlokas 15, 24,28,29, 31, 41, 42, 44-67, 134,135	Cognitive/ Recall	Must know	Shows	Swadhyaya (self learning)	Written or Viva	F & S	I	
CO1	Identify Uddesha, Niradesh Tantrayukties in this chapter	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	I	

Topic-18. Charak Samhita Sutrasthan Chapter 2. Apamarga Tanduliya Adhyaya; Time (Lecture:- 02 ; Non lecture 03 hours)

CO7	Enumerate few Shiro Virechana Dravya & Main Indications	Cognitive	Desirable to know	Knows	Lecture/Audiovisual aids/ Herbal garden visit	Written or Viva	F & S	II	Dravyaguna
CO7	Enumerate few Vamana Dravya & Main Indications	Cognitive	Desirable to know	Knows	Lecture/Audiovisual aids/ Herbal garden visit	Written or Viva	F & S	II	Dravyaguna
CO7	Enumerate few Virechana Dravya & Main Indications	Cognitive	Desirable to know	Knows	Lecture/Audiovisual aids/ Herbal garden visit	Written or Viva	F & S	II	Dravyaguna
CO7	Enumerate few Asthapana Basti Dravya & Main Indications	Cognitive	Desirable to know	Knows	Lecture/Audiovisual aids/ Herbal garden visit	Written or Viva	F & S	II	Dravyaguna

CO7	Enumerate few Anuvasana Basti Dravya & Main Indications	Cognitive	Desirable to know	Knows	Lecture/Audiovisual aids/ Herbal garden visit	Written or Viva	F & S	II	Dravyaguna
CO7	Enumerate the names & Main Indications of 28 Types of Yavagu	Cognitive	Desirable to Know	Knows	Lecture/Audiovisual aids	Written or Viva	F & S	II	Rasshastra-bhaishjya dept
CO7	Explain the Importance Of Panchakarma	Cognitive	Must know	Knows	Lectures	Written or Viva	F & S	II	Panchkarma
CO7	Explain the features of Vaidya	Cognitive	Must know	Knows	Lecture/Group Discussion	Written or Viva	F & S	II	
CO7	Recite Shlokas 15,16,36	Cognitive/Recall	Must know	Shows	Self-learning	Written or Viva	F & S	II	
CO7	Identify the dravyas on the basis of actions	Psychomotor	Must know	Shows	Herbal garden visit	Viva	Summative	II	Dravyaguna
CO1	Identify Upadesh, Samucchaya Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	II	
Topic-19. Charak Samhita Sutrasthan Chapter 3. Aragvadhya Adhyaya-Time (Lecture:- 01 ; Non lecture 03 hours)									
CO7	Mention Thirty Two Churna Pradeha & Main Indications	Cognitive	Desirable to know	Knows	Lectures/Multimedia aids	Written or Viva	Formative	II	Ras-bhaishjya/Kayachikitsa
Topic-20. Charak Samhita Sutrasthan Chapter 4. Shadvirechana-shatashritiya Adhyaya-Time (Lecture:- 03 ; Non lecture 04 hours)									
CO7	List the six abodes of purgatives	Cognitive/Recall	Must know	Know	Discussion	Written or Viva	F & S	II	Dravyaguna
CO7	Enlist the five tastes for medicinal preparation	Cognitive/Recall	Must know	Know	Lecture, discussion	Written or Viva	F & S	II	Rasashastra &

									bhaishajya Kalpana
CO7	Define the five types of medicinal preparations/ forms	Cognitive/ Recall	Must know	Know	Lecture / Multimedia aids	Written or Viva	F & S	II	Ras-bhaishjya
CO7	Enlist the 50 groups of medicines as per their actions	Cognitive/ Recall	Desirable to know	Know	Lecture	Written or Viva	F & S	II	Dravya guna
CO7	Limitations for description of medicinal drugs in Samhita	Cognitive/ Comprehension	Nice to know	Know how	Lecture	Written or Viva	Formative	II	
CO1	Identify Swasadnya , Samucchaya, Yog Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	II	
Topic-21. Charak Samhita Sutrashtan Chapter-05 Matrashiteeya Adhyaya- Time (Lecture:- 03 ; Non lecture 05 hours)									
CO5	Explain Matravat Ahara	Cognitive/ Recall	Must know	Know	Lecturer, Audio-Visual aids, Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a
CO5	Define and enlist Nature of Ahara (Guru, Laghu)	Cognitive/ Recall	Must know	Knows how	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a
CO5	Explain the significance of MatravatAharaPhala	Cognitive/ Recall	Must know	Know how	Lecturer, Audio-Visual aids, Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a
CO5	Discuss role of AharaSevanaVidhana on the bases of its nature	Cognitive/ Comprehension	Must know	Know how	Lecturer Audio-Visual aids	Written or Viva	Formative and Summative	II	Swastarutt a

					Group Discussion				
CO2	Define Swasthavrutta	Cognitive/ Recall	Must know	Knows	Lecturer Audio-Visual aids Group Discussion	.Viva	Formative and Summative	II	Swastarutt a
CO6	Explain Anjana	Cognitive/ Comprehension	Must know	Know	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a
CO6	Explain Dhumapana	Cognitive/ Comprehension	Must know	Knows how	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a, Shalakya , Panchakar ma
CO6	Explain Nasya	Cognitive/ Comprehension	Must know	Knows how	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a, Shalakya , Panchakar ma
CO6	Explain Dantadhavana	Cognitive/ Comprehension	Must know	know How	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a,
CO6	Explain Jivhanirlekhana	Cognitive/ Comprehension	Must know	know How	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a,
CO6	Explain Gandusha	Cognitive/ Comprehension	Must know	Knows how	Lecturer Audio-Visual aids	Written or Viva	Formative and Summative	II	Swastarutt a,

					Group Discussion				
CO6	Explain Abhyanga with types	Cognitive/Comprehension	Must know	Knows how	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a, Panchakarma
CO6	Describe Parimarjana	Cognitive/Comprehension	Must know	Knows how	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a,
CO4	Describe the VastraGandhaMalyadiDhara	Cognitive/Comprehension	Must know	Knows how	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a,
CO4	Explain the concept of Shouchavidhi	Cognitive/Comprehension	Must know	Knows how	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a,
CO4	Discuss the Kshourakarma	Cognitive/Comprehension	Must know	Know how	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a,
CO4	Define PadatraDharan with importance	Cognitive/Recall	Must know	Know how	Lecturer Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	Swastarutt a,
CO4	Explain the ChatraDharana	Cognitive/Recall	Must know	knows How	Lecturer Audio-Visual aids	Written or Viva	Formative and Summative	II	Swastarutt a,

					Group Discussion				
CO4	Justify the importance of the procedures mentioned as dincharya	Cognitive/ Application	Must know	Shows how	Group Discussion	Group Discussion/ Project work	Formative and Summative	II	
CO2	Recite the shlokas 4, 12-13, 34-35, 56-57,68-69, 81-83, 103	Cognitive/ Recall	Must know	Shows	Swadhyaya (self learning)	Viva	F & S	II	
CO1	Identify Upadesh, Padarth,, Nidarshan Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	II	
CO4	Research Updates: Role of Dinacharya to maintain circadian rhythm Role of therapeutic message for cell rejuevination Mechanism of satiation and proper quantity of food (Sauhitya Matra)	Cognitive	Nice to know	Knows how	Lecture; Audio-vidual aids	Group discussion	-	II	
Topic-22. Charak Samhita Sutrasthan Chapter-6. Tasyashiteeya Adhyaya-Time (Lecture:- 04 ; Non lecture 04 hours)									
CO2	Discuss the importance of Classification of Samvastara	Cognitive/ Comprehsion	Must know	Knows how	Lecture Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	
CO2	Explain the significance of Visarga Kala	Cognitive/ Comprehsion	Must know	Know how	Lecture Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	

CO2	Explain the significance of Adana kala	Cognitive/ Recall	Must know	Know how	Lecture Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	
CO4	Explain the nature of climate in Shadrutu	Cognitive/ Recall	Must know	Know how	Lecture Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	
CO4	Explain Sevaniya and Nishiddh Ahara Vihara in Shadrutu	Cognitive/ Recall	Must know	Know how	Lecture Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	
CO4	Define and explain the properties of Hamsodaka	Cognitive/ Recall	Must know	Knows	Lecture Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	
CO4	Justify the regimen mentioned as per seasons	Cognitive/ Application	Must know	Show how	Group Discussion	Group Discussion/ Project work/viva	Formative and Summative	II	
CO2	Describe Saatmya and its types	Cognitive/ Recall	Must know	Knows	Lecture Audio-Visual aids Group Discussion	Written or Viva	Formative and Summative	II	
CO2	Recite Shloka number 18, 21, 29, 35, 45, 49, 50	Cognitive/ Recall	Must know	Knows	Swadhyaya -Self learning	Written or Viva	Formative and Summative	II	
CO1	Identify Uddesh- Nirdesh , swasadnya Tantrayukties in this chapter..	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	II	

CO4	Research Updates: What causes the season: Summer and winter solistice- Equinoxes- Rotation of earth around sun.	Cognitive/ Applicatio n	Nice to know	Knows	Lecture, Audio- vidual aids	Group discussion	-	II	
Topic-23. Charak Samhita Sutrasthan Chapter-7. Naveganadharaniya Adhyaya-Time (Lecture:- 04 ; Non lecture 04 hours)									
CO4	Enumerate Adharaniya and Dharaniya Vega	Cognitive/ Recall	Must to know	know	lecture/ Group discussion/	Written or Viva	F & S	II	
CO4 CO6	Describe symptoms and treatment pattern of Adharaniya Vega	Cognitive	Must to know	Know how	lecture/ Group discussion /quiz	Written or Viva	F & S	II	
CO4	Cite symptoms and treatment pattern of Dharaniya Vega	Cognitive	Must to know	Know how	lecture/ quiz/Group discussion	Written or Viva	F & S	II	
CO4	Quote the contraindicated actions of mind, speech and body.	Cognitive	Must to know	Know	lecture/ quiz/Group discussion	Written or Viva	F & S	II	
CO4	Describe concept, effects and benefits of exercise	Cognitive	Must to know	Know how	lecture/ recitation/ quiz/Audiov isual aids	Written or Viva	F & S	II	Swasthav ritta
CO4	describe symptoms due to excessive exercise	Cognitive	Must to know	Know	lecture/ Group discussion/ quiz/Audiov isual aids	Written or Viva	F & S	II	Swasthav ritta
CO4	Describe the action which should be avoided in excess	Cognitive	Must to know	Know how	lecture/ Group discussion /quiz	Written or Viva	F & S	II	

CO4	Describe pattern of Ahita Krama tyaga	Cognitive	Must to know	Know how	lecture/ Group discussion/ quiz	Written or Viva	F & S	II	
CO4	Classify deha prakruti	Cognitive	Must to know	Know	lecture/ Group discussion/ quiz	Written or Viva	F & S	II	
CO6	Describe Aagantuj vyadhis (exogenous diseases)	Cognitive	Must to know	Know	lecture/ Group discussion/ quiz	Written or Viva	F & S	II	Nidan
CO6	Describe Pradnyaparadhaj vyadhi	Cognitive	Must to know	Know	lecture/ Group discussion/ quiz	Written or Viva	F & S	II	Nidan
CO4	State Vikar Anutpatti Vidhi (Preventive measures of diseases)	Cognitive	Must to know	Know how	lecture/ Group discussion/ quiz	Written or Viva	F & S	II	
CO6	describe treatment of Aagantuj (exogenous) and Manas (psychological)diseases	Cognitive	Must to know	Know how	lecture/ Group discussion/ quiz	Written or Viva	F & S	II	
CO4	Describe shodhan treatment as per season	Cognitive	Must to know	Know how	lecture/ Group discussion/ quiz	Written or Viva	F & S	II	Panchkar ma
CO4	Describe Aapta and anapta purush	Cognitive	Must to know	Know	lecture/ Group discussion/ quiz	Written or Viva	F & S	II	
CO4	Describe the rules of eating curd	Cognitive	Must to know	Know how	lecture/ Group	Written or Viva	F & S	II	

					discussion/ quiz				
CO2	Recite shloka number 27, 28, 29, 30, 31, 39, 40, 55, 60.	Cognitive	Must to know	Know how	lecture/ Group discussion/ quiz	Written or Viva	F & S	II	
CO1	Identify Arthapatti , Nirvachan, Vyakhyan Tantrayukties in this chapter.	Cognitive/ Applicatio n	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	II	
CO4	Research Updates: Corelation of genomic variation with the classification of Prakriti	Cognitive/ Recall	Desire to know	Know	lecture/ Audio- vidual aids	Group discussion	-	II	

Topic-24. Charak Samhita Sutrashtan Chapter-8. Indriyopakramaniya Adhyaya- Time (Lecture:- 04 ; Non lecture 03 hours)

CO2	Enumerate Indriya/ Dravya/Adhishthana/ Artha/ Buddhi	Cognitive/ Recall	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	
CO4	Write the characteristics of Mana	Cognitive/ Recall	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	
CO4	Justify the ektvam of Manas	Cognitive/ Comprehe nsion	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	
CO4	State that Sattvikatva, Rajasatva and Tamasatva of Manas	Cognitive/ Recall	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	
CO4	Tabulate Indriya PanchaPanchaka	Cognitive/ Recall	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	
CO4	Quote Adhyatma Dravya Guna Sangraha	Cognitive/ Recall	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	

CO4	State the predominant Mahabhuta in each Indriya	Cognitive/ Recall	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	
CO4	Know the role of Indriya and Mana in Prakriti and Vikriti	Cognitive/ Recall	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	
CO4	Discuss the Causes and Benefits of Sadvritta Anushthana	Cognitive/ Comprehension	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	
CO4	Elaborate the Do's and Don'ts in Sadvritta	Cognitive/ Recall	Must know	Know	Lectures/ Audio- Visual Aids/ Group Discussion	Written or Viva	Formative & Summative	II	
CO4	Explain Hetuchatushtaya	Cognitive/ Recall	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	
CO4	State the guideline for Anukta Sadvritta	Cognitive/ Recall	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	
CO2	Recite the shloka number 7-13, 34	Cognitive/ Recall	Must know	Shows	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	
CO1	Identify Upadesh , Samucchaya, Yog Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	Formative & Summative	II	
CO4	Research updates: Mental health and gut microbiota.	Cognitive/ Application	Nice to know	Know	Lectures/ Audio- Visual Aids	Group discussion	-	II	
Topic-2CO Charak Samhita Sutrasthan Chapter-9. Khuddakachatushpada Adhyaya- Time (Lecture:- 03 ; Non lecture 03 hours)									
CO8	Cite Chikitsa Chatuspada (four components of healthcare)	Cognitive	Must know	Know	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	II	

CO8	Define Roga-Arogya (disease-health)	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	
CO8	Define Chikitsa (treatment)	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	
CO8	List the Qualities of Vaidya (physician)	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	
CO8	List the Qualities of Dravya (medicine)	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	
CO8	List the Qualities of Paricharaka (nursing staff)	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	
CO8	List the Qualities of Aatura (patient)	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	
CO8	State the importance of Vaidya in the 4 components of healthcare	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	
CO8	Write the Complications due to ignorant physician	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	
CO8	Describe the Sadvaidya Qualities (good physician)	Cognitive/ Comprehension	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	
CO8	Write the duties of the physician	Cognitive/ Comprehension	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	
CO8	List Four types of Vaidya vritti (attitude of the physician)	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	

CO8	Recite the shloka number 3,4,5,18,20,21, 24,25,26	Cognitive/ Recall	Must know	Shows	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	II	
CO8	Discuss the qualities and duties of a good physician	Cognitive/ Application	Must know	Shows how		Written or Viva	Formative	II	
CO1	Identify Uddesh, Niradesh, Nidarshan Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	II	
CO8	Research Updates: Medical ethics-principles Soft Skill development for medical students Emotional Intelligence as a crucial component in medical education	Cognitive	Nice to know	Knows	Lecture / Audio-Visual aids	Group discussion	-	II	

Topic-26. Charak Samhita Sutrasthan Chapter-10. Mahachatushpada Adhyaya- Time (Lecture:- 03 ; Non lecture 03 hours)

CO6	Substantiation of Chatushpada- bhashajam alam aarogyaayeti (aatreya-krtā), Bhashaja-abhashajayo tulyatva pratipaadana – (maitreya-krtā), Its conclusion by Atreya,	Cognitive/ Recall	Desirable to know	Knows	Lecture with substantiation of the point by mentioning contemporary examples	Written & Viva	F & S	II	
CO6	Explain the Cikitsa sootram- Cikitsaayaam yasolaabhe kaaranam,	Cognitive/ Recall	Desirable to know	Knows	Lecture with substantiation of the point by mentioning	Written or Viva	F & S	II	

					contemporar y examples				
CO6	Asaadhyaroga- cikitsaayaam haani,	Cognitive/ Recall	Desirable to know	Knows	Lecture with substantiatio n of the point by mentioning contemporar y examples	Written or Viva	F & S	II	
CO6	Describe the upamaana pramaana	Cognitive/ Recall	Desirable to know	Knows	Lecture with substantiatio n of the point by mentioning contemporar y examples	Written or Viva	F & S	II	
CO6	Enumerate and analyse the further classification of saadhya-asaadhyata	Cognitive/ Recall	Must know	Knows	Lecture with live demonstrati on in OP	Written or Viva	F & S	II	
CO6	Identify, judge and discuss Sukha-saadhya lakshanam, Krcchra- saadhya lakshanam, Yaapya lakshanam and Pratyaakhyeya lakshanam	Cognitive/ Recall	Must know	Knows how	Lectures and clinical demonstrati on	Viva / written Problem based assessment	F & S	II	
CO6	Apply and interpret the benefit of knowledge of prognosis	Cognitive/ Recall	Must know	Knows	Lectures	Written or Viva	F & S	II	
CO6	Analyse the term mithyaa- buddhi and accept responsibility to not end up as a mithyaa-buddhi at	Cognitive/ Recall	Must know	Knows	Lectures	Written or Viva Discussions	F	II	

	any point of time of the profession								
CO6	Recite Shloka number 14 to 20	Cognitive/ Recall	Must know	Knows	Lecture, swaadhyaya	Viva	F & S	II	
CO1	Identify Nirnaya, Swasdnya, Sanshaya, Ekant Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	II	
Topic-27. Charak Samhita Sutrashtan Chapter-11. Tisraishaniya Adhyaya- Time (Lecture:- 06 ; Non lecture 05 hours)									
CO4	Explain the significance of the three desires for prana (life) and dhana(means of life).	Cognitive/ Recall	Must know	Know how	Lectures/ Audio-Visual Aids	Written & Viva	Formative & Summative	III	
CO4	Discuss the concept of paraloka	Cognitive/ Recall	Must know	Know how	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO4	Discuss different opinions on the concept of punarjanma (re-birth)	Cognitive/ Recall	Must know	Know how	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO2	Define characteristics of Aapta	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO2	Define pratyaksha, anumana and yuktipramana with example	Cognitive/ Recall	Must know	Know how	Lectures/ Audio-Visual Aids	Lectures/ Audio-Visual Aids	Formative & Summative	III	

CO2	Justify punarjanma by using aaptopadesha, pratyaksha, Anumana and yuktipramana	Cognitive/ Application	Must know	Know how	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO4	Explain the importance of thrayopasthamba (sub-pillars of life).	Cognitive/ Application	Must know	Know how	Lectures/ Audio-Visual Aids	Written-MCQ/ SAQ/ LAQ & Viva	Formative & Summative	III	
CO4	Discuss the three types of bala (strength) and its importance.	Cognitive/ Application	Must know	Know how	Lectures/ Audio-Visual Aids	Written & Viva	Formative & Summative	III	
CO6	Describe the three causes of disease.	Cognitive/ Application	Must know	Know	Lectures/ Audio-Visual Aids	Written & Viva	Formative & Summative	III	
CO6	Identify the symptoms due to excessive, less and improper use of sense organs	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO6	Identify the symptoms due to excessive, less and improper verbal, psychic and physical actions.	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO6	Define Prajnaparadha	Cognitive/ Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	

CO6	Identify the signs of excess, less and improper kaala (season)	Cognitive/Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO6	Define nija, agantu and manasa roga.	Cognitive/Recall	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO6	Discuss general treatment protocol for manasavyadhi (psychological disorders)	Cognitive/Comprehension	Must know	Know how	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO6	Discuss the three disease pathways	Cognitive/Comprehension	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO8	Classify the three types of physicians	Cognitive/Comprehension	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO6	Describe daivavyapashraya, yuktivyapashraya and satvavajayachikitsa	Cognitive/Comprehension	Must know	Know how	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO6	Describe antahaparimarjana, bahiparimarjana, shastrapranidhanachikitsa.	Cognitive/Comprehension	Must know	Know how	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	

CO2	Discuss importance of ashta trika.	Cognitive/ Application	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO2	Recitation of Shloka number 18,19,20,21,22,23,24, 25, 47.	Skill	Must know	Know	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO1	Identify Swasadnyaa, samucchaya , Samshaya, Nirvachan Tantrayukties in this chapter.	Cognitive/ Application	Must know	Knows how	Lecturer/ Group discussion	Viva	F & S	III	
Topic-28. Charak Samhita Sutrasthan Chapter-12. Vatakalakaliya Adhyaya-Time (Lecture:- 04; Non lecture 05 hours)									
CO4	explore the various properties of vata	Cognitive/ Recall	Must know	Knows how	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO4	Discuss the opinions of various aacharyas on different aspects of Vata dosha	Cognitive/ Recall	Must Know	Knows	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	
CO4	Explore various factors responsible for aggravation and and pacification of vata dosha	Cognitive/ Recall	Must know	Knows how	Lectures/ Audio-Visual Aids/Group Discussion	Written or Viva	Formative & Summative	III	
CO4	enumerate prakrita and vikrita karma of vata	Cognitive/ Recall	Must know	Knows how	Lectures/ Audio-Visual Aids/ Group Discussion	Written or Viva	Formative & Summative	III	
CO4	Explain the clinical application of Vata Guna	Cognitive/ Recall	Desirable to know	Knows how	Lectures/ Audio-Visual Aids	Written or Viva	Formative & Summative	III	

CO4	Describe the action of normal and aggravated Pitta	Cognitive/ Comprehe nsion	Must know	Knows how	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	III	
CO4	Describe the action of normal and aggravated Kapha	Cognitive/ Comprehe nsion	Must know	Knows how	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	III	
CO4	Describe atreya's exploration on Tridosha and its importance	Cognitive/ Comprehe nsion	Must know	Knows how	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	III	
CO4	Recite the shlokas- 8,11,12	Cognitive/ Recall	Must know	Shows	Lectures/ Audio- Visual Aids	Written or Viva	Formative & Summative	III	
CO1	Identify Padartha, Vyakhyan , Anumat Tantrayukties in this chapter	Cognitive/ Applicatio n	Must know	Knows how	Lecturer/ Group discussion	Viva	Formative & Summative	III	

Table 4 : Practical/ Activities for AyUG - SA 1

Term wise distribution of allotted time				
Term	Total teaching (400 hrs)	Lecture (140 hrs)	Non Lecture (260hrs)	
			Samhita Pathan (130 hrs)	Activities- In class/ Hospital (130 hrs)
I	130 hrs.	50 hrs.	50	30
II	140 hrs.	50 hrs.	40	50
III	130 hrs.	40 hrs.	40	50

Table 5: Non Lecture Activities Course AyUG-SA1

Non Lecture activities- (Samhita Pathan / In Class Activities & Hospital Based activities)
: 260 hrs

SN	Name of Practical	Term	
1.	Samhita Pathan	I, II, III	Total 130 in all three terms. (Term I-50 hrs; Term II - 40hrs; Term III - 40hrs)
	In Class Activities/ Case Based Activities/ Field Activities		
2.	1. Introduction to Samhita Problem based learning : Application of Tantrayukti for chapter number 1, 2 of Ashtang Hridaya and chapter 1 st of charak Samhita.	I	5 hrs.
	Group Activity Interpret Anubandha Chatushtya with examples Interpret Ashta Prashna with example	I	4 hrs
	Ashtang Hriday Samhita - Sutrasthan (1-5Adhyaya)		
3.	AH Su 1. Ayushkamiya Adhyaya Commentary Based activity- Fetch the meaning of important terms on the basis of commentary. (Any 30 important words). Make your own dictionary.	I	3 hrs
4.	AH Su 2. Dinacharya Adhyaya- Survey Activity: Application of concepts- Dincharya and its application: Proforma based assessment in healthy volunteers/ patients. Daily routine shall be recorded on the basis of predesigned proforma and then shall discuss. Communication Skill introduction. Survey Role play.	I	4 hrs

5.	AH Su 3. Rutucarya Adhyaya- Application of concepts- Ritucharya and application - Proforma based assessment in healthy individuals or patients.	I	4 hrs
6.	AH Su 4. Roganutpadaniya Adhyaya- Case Based Activity/Learning- Assess the sign and symptoms of given case on the basis of learning of Adharaneeya Vegas and find out the probable causative factors on the basis of principles taught.	I	4 hrs
7.	AH Su 5. Dravadravya Vijnaniya Adhyaya Group Activity-(Group presentation)- Utility of Dravyas:- Allocate the Dravadravya Vargas among student groups. Every group will Justify (represent) the practical utility of dravyas allotted to them.	I	4 hrs
8.	6. Annaswaroopa Vijnaneeya Adhyaya- Group presentation- Justify the utility of this chapter in present era- Every group will illustrate the utility of their assigned Aahara Dravya Varga (Discuss practically available dravyas)	II	3 hrs
9.	7. Annaraksha Adhyaya- Discussion- Explore the present dietary habits- Explore the Various diet combinations used in present society (by four family/ Relatives/ neighborhood) on the basis of principles learned for viruddhahar. Discuss them in class. Trayopastambha -Importance of Nidra- Flipped classroom- Share the prerecorded videos/ other material with students before class. On the basis of these have discussion.	II	4 hrs
10.	8. Matrashitiya Adhyaya- Case Based learning- Determine adverse effects of heena matra	II	4 hrs

	<p>(inadequate quantity of food) and atimatra (excess quantity of food) ahara:- (Video clip of patient suffering from a type of Ajeerna can be shared in class and then group wise discussion on the concept.)</p> <p>Group Activity- Differentiate between the food items recommended and non-recommended for daily use:- Cross refer the previous chapters and demonstrate the rationale behind the wholesome or unwholesome nature of these enlisted Dravyas referring their qualities.</p>		
11.	<p>9. Dravyaadi Vijnaniya Adhyaya- Application of concepts- Enlist the dravyas according to Rasa, Veerya, Vipaka, Prabhav. (Can refer chapter 5,6,10 of Ashtang Hriday and Chapter 2, 3, 4 of Charak Samhita). Apply the concepts learned in present chapter to understand the action of Dravyas.</p>	II	4 hrs
12.	<p>10. Rasabhedhiya Adhyaya- Case based learning- Prepare proforma enlisting the sign and symptoms of excess consumption of six Rasas and regular diet pattern. Assess the predominance of Rasa consumption in patients or healthy volunteers. Then Correlate with the case findings.</p>	II	4 hrs
13.	<p>11. Doshadi Vijnaniya Adhyaya- Case Based learning-(CBL)- Assess the patient for Vriddhi and Kshaya Lakshanas of Dosha-Dhatu-Mala, based on predesigned proforma. Discuss these case findings later in class.</p>	III	5 hrs
14.	<p>12. Doshabhedhiya Adhyaya- Model making Activity- Working models on Dosha Sthanas or Subtypes of Doshas, Chaya, Prakop and Prashama of Doshas: PBL/CBL</p>	III	5 hrs

	Give one problem/case based on Samanya Dosh Nidan. Student will identify possible causative factors responsible for vitiation of Doshas in given problem.		
15.	<p>13. Doshopakramaniya Adhyaya- Case Based learning-(CBL)- Group activity- Observe the signs and symptoms of Ama in any five patients (Group wise) and present and discuss it in class.</p> <p>Seminar Presentation-</p> <ol style="list-style-type: none"> Understand Aushadha Kaal in relation with suntypes of Vata Dosh. Recognize the principles applicable during treatment of Saam Dosh and Dushyas. 	III	6 hrs
16.	<p>14. Dvividhopakramaniya Adhyaya-</p> <p>Case based learning- Find out the causative factors of Atishualya in present era (On the basis of predesigned proforma) CBL Share video clip of any patient suffering from Atikarshya- On the basis of previous learning discuss the contributing factors responsible for malnourishment. (Explore Dhatu Sneha Parampara in present context).</p>	III	5 hrs
17.	<p>15. Shodhanadigana Sangraha Adhyaya- Group Presentation- Divide the various Aushadha Vargas among students and a group will represent each varga and related practical information.</p>	III	4 hrs
	Charak Samhita – Sutrasthan (1-12 Adhyaya)		
18.	<p>CS Su 1. Deerghanjiviteeya Adhyaya-</p> <p>Compilation work: (based on commentry)</p> <ul style="list-style-type: none"> Student has to write 20 terminologies with meanings referring Chakrapani commentary. Then after these terms shall be discussed in class. 	I	2

19.	CS Su 2. Apamarga Tanduliya Adhyaya- Visit to Dravyaguna Department- Identify the dravyas on the basis of different karmas	II	3 hrs
20.	CS Su 3. Aragvadhiya Adhyaya- Group Discussion- Probable mode of action of drugs applied externally? In which form they will more absorbable? (May take help of published literature; discuss linking with Ayurveda fundamentals.) Practical demonstrations in Panchakarma unit on patients. Workshop/ demonstration of preparation of different lepas useful in different conditions.	II	3 hrs
21.	CS Su 4. Shadvirechana-shatashritiya Adhyaya- Practical Demonstration: Visit to Dravyaguna Department and demonstration of various Mahakashay and its uses (Integration with Dravyaguna department)	II	4 hrs
22.	CS Su 5. Matrashiteeya Adhyaya- Visit to Panchakarma Unit of Hospital – Demonstration of abhyanga, mardana, udvartana and other procedures to be followed in daily routine (Integration with Panchakarma Department) Group Project : Gather information about nutritive values of Nitya Sevaniya Dravyas. Assess their classical properties. Discuss why these dravyas are specially advised for regular consumption.	II	5 hrs
23.	CS Su 6. Tasyashiteeya Adhyaya- Documentation- Festival and rutu- Documenting the changes in the food habits and	II	4 hrs

	<p>lifestyle as per the rutu with the parents and elders and also discussing on relevance of rutucharya concept with Indian festivals.</p> <p>Short Essay writing /Poster making- Does and don'ts to be followed according to various seasons (Refer both the Samhitas for this activity)</p>		
24.	<p>CS Su 7. Naveganadharaniya Adhyaya:-</p> <p>Vedio clip making Activity- Educating people about harms of vega dharana by social media campaigns</p> <p>Group Discussion- Finding reasons for vega dharana in present day lifestyle.</p>	II	4 hrs
25.	<p>CS Su 8. Indriyopakramaniya Adhyaya- Group Presentation- Sadvrutta – Interpreting relevance of different sadvrutta in present scenario. Developing new sadvruttas as per todays' lifestyle referring classics.</p>	II	3 hrs
26.	<p>CS Su 9. Khuddakachatushpada Adhyaya- Doctor Patient communication introduction, Role play. Feedback collection of chikitsa chatushpada Group activity- Collect Feedback on qualities of Vaidya from rogi and upasthata. Collect Feedback on qualities of rogi from vaidya and upasthatha Collect Feedback on qualities of upasthatha from rogi and Vaidya Collect feedback on qualities of dravya from the experts of dravyaguna and rasa shastra</p>	II	3 hrs
27.	<p>CS Su 10. Mahachatushpada Adhyaya- Developing proforma for sadhya asadhya vyadhi lakshanas-</p>	II	3 hrs

	Guide students on how to prepare a proforma to assess any available parameters.		
28.	CS Su 11. Tisraishaniya Adhyaya- Debate :- Punarjanma siddhant as per different thoughts. Debate on punarjanma with different references as per classics and contemporary understanding.	III	5 hrs
29.	CS Su 12. Vatakalakaliya Adhyaya- Role Play (Enact sambhasha parishad) – Distribute the characters of the rishis given in chapter. And guide them with the script. Arrange a forum where these students will be doing sambhasha parishad on vata kala-akala. Decode the sutras- Students in groups will use different tools like infographics/ animation/ ppts to illustrate the normal functions of Vata Dosha explained in present chapter. (Refer Chakrapani commentary thoroughly to understand the meaning of Sanskrit shlokas). Introduction to Group Dynamics. Communication skills for Group Discussions.	III	5 hrs
30.	Shloka Recitation Competition- At the end of the year/ every term such competition shall organized by department.	III	5 hrs
31.	Ayurveda Quiz- On the basis of assigned syllabus.	III	5 hrs
32.	Poster making Competition / SA writing completion / Making video clips for general people to make awareness about Ayurved living.	III	5 hrs

Table 6: Assessment Summary

6 A- Number of Papers and Marks Distribution

S.No.	Subject Code	Papers	Theory	Practical/Clinical Assessment					Grand Total
				Practical/Clinical	Viva	Electives	IA	Sub Total	
1.	AyUG-SA1	1	100	-	75	10 (Set-FC)	15	100	200

6 B - Scheme of Assessment (formative and Summative)

SR.NO.		PROFESSIONAL COURSE	DURATION OF PROFESSIONAL COURSE		
			First Term (1-6 Months)	Second Term (7-12 Months)	Third Term (13-18 Months)
1	AyUG-SA1	First	3 PA & First TT	3 PA & Second TT	3 PA & UE
PA: Periodical Assessment; TT: Term Test; UE: University Examinations					

6 C - Calculation Method for Internal assessment Marks (15 Marks)

TERM	PERIODICAL ASSESSMENT*					TERM TEST**	TERM ASSESSMENT	
	A	B	C	D	E	F	G	H
	1 (15 Marks)	2 (15 Marks)	3 (15 Marks)	Average (A+B+C/3)	Converted to 15 Marks (D/15*15)	Term Test (Marks converted to 15) (15 Marks)	Sub Total /30 Marks	Term Assessment (.../15)
FIRST							E+F	(E+F)/2
SECOND							E+F	(E+F)/2
THIRD						NIL		E
Final IA	Average of Three Term Assessment Marks as Shown in 'H' Column.							
	Maximum Marks in Parentheses *Select an Evaluation Methods which is appropriate for the objectives of Topics from the Table 6 D for Periodic assessment. Conduct 15 marks assessment and enter marks in A, B, and C. ** Conduct Theory (100 Marks)(MCQ(20*1 Marks), SAQ(8*5), LAQ(4*10)) and Practical (100 Marks) Then convert to 15 marks.							

6 D - Evaluation Methods for Periodical Assessment

S. No.	Evaluation Methods
1.	Activities Indicated in Table 3 - Column G3 as per Indicated I, II or III term in column I3.
2.	Practical / Clinical Performance

3.	Viva Voce, MCQs, MEQ (Modified Essay Questions/Structured Questions)
4.	Open Book Test (Problem Based)
5.	Summary Writing (Research Papers/ Samhitas)
6.	Class Presentations; Work Book Maintenance
7.	Problem Based Assignment
8.	Objective Structured Clinical Examination (OSCE), Objective Structured Practical Examination (OPSE), Mini Clinical Evaluation Exercise (Mini-CEX), Direct Observation of Procedures (DOP), Case Based Discussion (CBD)
9.	Extra-curricular Activities, (Social Work, Public Awareness, Surveillance Activities, Sports or Other Activities which may be decided by the department).
10.	Small Project

6 E - Paper Layout

I PROFESSIONAL BAMS EXAMINATIONS

AyUG-SA1

Time: 3 Maximum Marks: 100

INSTRUCTIONS: All questions compulsory

TOTAL MARKS 100

		Number of Questions	Marks per question	Total Marks
Q 1	Multiple Choice Questions (MCQ)	20	1	20
Q 2	Short answer questions (SAQ)	8	5	40
Q 3	Long answer questions (LAQ)	4	10	40
				100

6 F - Distribution of Theory Exam

AyUG-SA1		D Type of Questions "Yes" can be asked. "No" should not be asked.				
	A List of Topics	B Term	C Marks	MCQ (1 Mark)	SAQ (5 Marks)	LAQ (10 Marks)
1.	Introduction to Samhita-	1		No	/NO	NO
Ashtang Hriday Samhita - Sutrasthan (1-15 Adhyaya) 50 marks						
2.	AH Su.1. Ayushkamiya Adhyaya	1	50	YES	YES	YES

3.	AH Su.2. Dinacharya Adhyaya	I	50	YES	YES	YES	
4.	AH Su.3. Rutucarya Adhyaya	I		YES	YES	YES	
5.	AH Su.4. Roganutpadaniya Adhyaya	I		YES	YES	YES	
6.	AH Su.5. Dravadravya Vijnaniya Adhyaya	I		NO	YES	NO	
7.	AH Su.6. Annaswaroopa Vijnaneeya Adhyaya	II		NO	YES	NO	
8.	AH Su.7. Annaraksha Adhyaya	II		NO	YES	NO	
9.	AH Su.8. Matrashitiya Adhyaya	II		YES	YES	YES	
10.	AH Su.9. Dravyaadi Vijnaniya Adhyaya	II		YES	YES	YES	
11.	AH Su.10.Rasabhedhiya Adhyaya	II		YES	YES	YES	
12.	AH Su.11.Doshadi Vijnaniya Adhyaya	III		YES	YES	YES	
13.	AH Su.12.Doshabhedhiya Adhyaya	III		YES	YES	YES	
14.	AH Su.13.Doshopakramaniya Adhyaya	III		YES	YES	YES	
15.	AH Su.14.Dvividhopakramaniya Adhyaya	III		YES	YES	YES	
16.	AH Su.15.Shodhanadigana Sangraha Adhyaya	III		NO	NO	NO	
Charak Samhita – Sutrasthan (1-12 Adhyaya):							
17.	CS S 1. Deerghanjiviteeya Adhyaya-	I		YES	YES	YES	
18.	CS S 2. Apamarga Tanduliya Adhyaya-	II	NO	YES	NO		
19.	CS S 3. Aragvadhiya Adhyaya-	II	NO	YES	NO		
20.	CS S 4. Shadvirechana-shatashritiya Adhyaya-	II	NO	YES	NO		
21.	CS S 5. Matrashiteeya Adhyaya-	II	YES	YES	YES		
22.	CS S 6. Tasyashiteeya Adhyaya-	II	YES	YES	YES		
23.	CS S 7. Naveganadharaniya Adhyaya-	II	YES	YES	YES		
24.	CS S 8. Indriyopakramaniya Adhyaya-	II	YES	YES	YES		
25.	CS S 9. Khuddakachatuspada Adhyaya-	II	YES	YES	YES		
26.	S 10. Mahachatuspada Adhyaya-	II	YES	YES	YES		
27.	S 11. Tisraishaniya Adhyaya-	III	YES	YES	YES		
28.	S 12. Vatakalakaliya Adhyaya-	III	YES	YES	YES		

6 G - Question paper blue print

A Question Sr. No	B Type of Question	C Question Paper Format 50 marks AH/S 50 Marks CS/S
.Q1	Multiple choice Questions	1. Topic number 2 (A.H.Su.Ch.1)

	<p>(MCQ)</p> <p>20 Questions</p> <p>1 mark each</p> <p>All compulsory</p> <p>From Must know part 15 MCQ</p> <p>From Desirable to know 3 MCQ</p> <p>From Nice to know 2 MCQ</p>	<ol style="list-style-type: none"> 2. Topic number 3 (A.H.Su.Ch.2) 3. Topic number 4 (A.H.Su.Ch.3) 4. Topic number 5 (A.H.Su.Ch.4) 5. Topic number 9 (A.H.Su.Ch.8) 6. Topic number 10 (A.H.Su.Ch.9) 7. Topic number 11 (A.H.Su.Ch.10) 8. Topic number 12 (A.H.Su.Ch.11) 9. Topic number 13 (A.H.Su.Ch.12) 10. Topic number 14 (A.H.Su.Ch.13) 11. Topic number 15 (A.H.Su.Ch.14) 12. Topic number 17 (C.S.Su.Ch.1) 13. Topic number 21 (C.S.Su.Ch.5) 14. Topic number 22 (C.S.Su.Ch.6) 15. Topic number 23 (C.S.Su.Ch.7) 16. Topic number 24 (C.S.Su.Ch.8) 17. Topic number 25 (C.S.Su.Ch.9) 18. Topic number 26 (C.S.Su.Ch.10) 19. Topic number 27 (C.S.Su.Ch.11) 20. Topic number 28 (C.S.Su.Ch.12)
Q2	<p>Short answer Questions (SAQ)</p> <p>Eight Questions</p> <p>5 Marks Each</p> <p>All compulsory</p> <p>Must know 7,</p> <p>Desirable to know 1</p> <p>No Questions on Nice to know</p>	<ol style="list-style-type: none"> 1. Topic no. 2 (A.H.Su.Ch.1) / Topic no. 25 (C.S.Su.Ch.9) / Topic number 26 (C.S.Su.Ch.10) 2. Topic no. 3(A.H.Su.Ch.2) / Topic no. 9(A.H.Su.Ch.8) / Topic no. 21(C.S.Su.Ch.5) / Topic no. 24 (C.S.Su.Ch.8) 3. Topic no. 4 (A.H.Su.Ch.3) / Topic no. 22 (C.S.Su.Ch.6) / Topic no. 5 (A.H.Su.Ch.4) / Topic no. 23 (C.S.Su.Ch.7)/ 4. Topic no. 12 (A.H.Su.Ch.11) / Topic no. 13 (A.H.Su.Ch.12)/ Topic no.28 (C.S.Su.Ch.12) 5. Topic no. 17 (C.S.Su.Ch.1) 6. Topic no. 6 (A.H.Su.Ch.5)/ Topic no.7 (A.H.Su.Ch.6)/ Topic no.18 (C.S.Su.Ch.2)/ Topic no.19 (C.S.Su.Ch.3) / Topic no.20 (C.S.Su.Ch.04) / Topic no.16 (A.H.Su.Ch.15) 7. Topic no.8 (A.H.Su.Ch.7) /Topic no. 10 (A.H.Su.Ch.9) / Topic no.11 (A.H.Su.Ch.10)/ 8. Topic no. 14 (A.H.Su.Ch.13) Topic no.15 (A.H.Su.Ch.14)/ Topic no. 27 (C.S.Su.Ch.11)
Q3	<p>Long answer Questions (LAQ)</p> <p>Four Questions</p> <p>10 marks each</p> <p>All compulsory</p>	<ol style="list-style-type: none"> 1. Topic no. 2 (A.H.Su.Ch.1) / Topic no. 17 (C.S.Su.Ch.1)/ Topic no. 25 (C.S.Su.Ch.9)/ Topic number 26 (C.S.Su.Ch.10) 2. Topic no.3(A.H.Su.Ch.2) / Topic no. 4 (A.H.Su.Ch.3)/ Topic no. 21(C.S.Su.Ch.5) / Topic no. 22 (C.S.Su.Ch.6)

	All questions on Must to know. No Questions on Nice to know and Desirable to know	3. Topic no. 12 (A.H.Su.Ch.11) / Topic no. 13 (A.H.Su.Ch.12)/ Topic no. 14 (A.H.Su.Ch.13)/ Topic no.15 (A.H.Su.Ch.14) / Topic no.28 (C.S.Su.Ch.12) 4. Topic no. 9(A.H.Su.Ch.8)/ Topic no. 10 (A.H.Su.Ch.9) / Topic no.11 (A.H.Su.Ch.10)/ Topic no. 27 (C.S.Su.Ch.11)/ Topic no.5 (A.H.Su.Ch.4)/ Topic no. 23 (C.S.Su.Ch.7)
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6 H - Distribution of Practical Exam

Practical 100 Marks – (Viva 75 + Elective 10 (Set-FC) + IA 15) Marks

SN		Heads	Marks
A		Viva (75 Marks)	
	1	Viva on Record Book (of yearly conducted non lecture activities) (Refer Table 5)	15
	2	Viva on Shloka Book and Shloka Recitation (Ref table 3. Recitation)	10
	3	Identification of Tantrayukti Viva on .Introduction to Samhita (ref Table 2: 1)	15
	4	Viva Voce on AH	15
	5	Viva Voce on Ch Su	15
	6	Communication Skill	05
B		Internal Assessment	15
C		Electives	10
		Total Marks	100

7. Reference books/Resources

- **Introduction to Samhita**

1. Ashtanghridayam with the commentaries ‘Sarvangasundara’ of Arundatta and ‘Ayurvedarasayana’ of Hemadri, Collated by Dr. Anna Moreshwar Kunte and Krishna Ramchandra Shastri Navre
2. Sushruta Samhita by Dr. Ambikadutta Shastri
3. Ayurvedeeya Padartha Vijnaan by Prof. C. R. Agnivesh
4. Ayurvedeeya Padartha Vijnaan and Ayurvedeeya itihaasam by Prof. C. R. Agnivesh
5. Ayurvediya Padarth Vidnyan by Vd. Ranjit Rai Desai
6. History of Medicine in India by Aacharya Priyavrat Sharma
7. History of Indian Medicine by J. Jolly

- **Ashtang Hridaya**

1. Ashtanghridayam with the commentaries ‘Sarvangasundara’ of Arundatta and ‘Ayurvedarasayana’ of Hemadri, Collated by Dr. Anna Moreshwar Kunte and Krishna Ramchandra Shastri Navre
2. Ashtanga Hridaya : English commentary by Dr. T. Shreekumar
3. Ashtanga Hridaya : English commentary by Dr. Vishwvasu Gaur
4. Ashtang Hridayam : English translation by Prof. K.R. Srikantha Murthy
5. Ashtanga Hridaya –English translation by Vd. Anantram Shastri
6. Ashtanga Hridayam by Dr. B. Ramarao
7. Illustrated Ashtanga Hridaya text with English Translation by Dr. R. Vidyanath
8. Ashtanga Hridaya: Hindi commentary by Lalchanda Vaidya
9. Ashtanga Hridaya: Hindi commentary by Vd. B.L.Gaur

- **Charak Samhita**

1. Charakasamhita by Agnivesha Revised by Charaka and Dridhbala with the Ayurveda Dipika commentary of Chakrapanidatta Edited by Vaidya Yadavji Trikamji Acharya
2. Charak Samhita (English Commentary): Dr. Ram Karan Sharma and Vd. Bhagwan Dash or Acharya Priyavrata Sharma
3. Charak Samhita with translation of Chakrapani commentary by Harishchandra Kushvaha
4. Charak Samhita by Acharya P.V.Sharma
5. Charak Samhita (Hindi commentary): Vaidya Jayadev Vidyalkar
6. Charak Samhita (Hindi commentary): Vaidya Atridev Vidyalkar
7. Charak Samhita (Hindi commentary): Prof. Gorakhanath Chaturvedi and Kashinath Shastri
8. Charak Samhita (Hindi commentary): Dr. Brahmanand Tripathi
9. Charak Samhita (Hindi commentary): Dr. Ravidatta Tripathi
10. Charaka Samhita –Ayurveda Dipika Commentary- Hindi translation by Dr. B.L.Gaur
11. Legacy of Charak – M S Valiathan
12. Charak e-Samhita –National Institute of Indian Medical Heritage –
<http://niimh.nic.in/ebooks/ecaraka>
13. Charakasamhitaonline.com- [Charak Samhita New Edition \(carakasamhitaonline.com\)](http://Charak Samhita New Edition (carakasamhitaonline.com))