

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 (Vitiation 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. Vatavaha 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:

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| 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 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

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, Bronchiectasis, 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. Haemopoietic 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:

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| 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.

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, Kedārī-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, Visramsa* 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 *Dūṣita 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 āhāravidhi viśesāyatana, Āhāraparināmakara bhāva.
- **Āhārpāchana:** Āhāra Pāka Prakriyā, Description of Annavaha Srotās. Description of Avasthāpāka and Nishthapaka. 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 Dhātvaṅni.
- 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 Haemopoetic 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 Dhyan |
| • 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) - 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 - 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
- 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.
7. Tav Pritesh Sethi, Bhavana Prasher and Mitali Mukerji. Ayurgenomics: A New Way of Threading Molecular Variability for Stratified Medicine. *ACS Chemical Biology.*2011(6):875-880
8. Marchetti B, Morale MC, Gallo F, Batticane N, Farinella Z, Cioni M. Neuroendocrineimmunology (NEI) at the turn of the century: towards a molecular understanding of basic mechanisms and implications for reproductive physiopathology. *Endocrine.* 1995 Dec;3(12):845-61.
9. Licinio J, Frost P. The neuroimmune-endocrine axis: pathophysiological implications for the central nervous system cytokines and hypothalamus-pituitary-adrenal hormone dynamics. *Braz J Med Biol Res.* 2000 Oct;33(10):1141-8.
10. Turrin NP, Rivest S. Unraveling the molecular details involved in the intimate link between the immune and neuroendocrine systems. *Exp Biol Med (Maywood).* 2004 Nov;229(10):996-1006
11. Sewlall S, Pillay V, Danckwerts MP, Choonara YE, Ndesendo VM, du Toit LC. A timely review of state-of-the-art chronopharmaceuticals synchronized with biological rhythms. *Curr Drug Deliv.* 2010 Dec;7(5):370-88.
12. Ohdo S. Chronopharmaceuticals: pharmaceuticals focused on biological rhythm. *Biol Pharm Bull.* 2010 Feb;33(2):159-67
13. Humes HD. Stem cells: the next therapeutic frontier. *Trans Am Clin Climatol Assoc.* 2005;116:167-83; discussion 183-4.
14. Bianco P, Robey PG. Stem cells in tissue engineering. *Nature.* 2001 Nov 1;414(6859):118-21
15. Bhattacharya J. The Knowledge of Anatomy and Health in Ayurveda and Modern Medicine: Colonial Confrontation and Its Outcome
16. Wujastyk D. Interpreting the image of the human body in premodern India. *Int J Hindu Studies* 13: 189–228, 2009.
17. Kristina Harris, Amira Kassis, Geneviève Major, Chieh J. Chou. Is the Gut Microbiota a New Factor Contributing to Obesity and Its Metabolic Disorders? *J Obes.* 2012; 2012: 87915

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 Sarvangsundara.
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 Chakravarthi	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 |

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. Vridhi 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 Sangyaharan.
4. Aroma therapy as complementary and alternative therapy in pain management and Palliative care.
5. Sangyaharan 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 Sangyahrana.
 - 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, Phimosi, 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. 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 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 Shalakyta 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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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 vridhi, 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, Iepa, 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 vriddhi.
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- 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.
