1.3 KRIYA SHARIR
(Physiology)

Two Papers-180 Marks (90 marks each)

Internal Assessment – 20 Marks

Teaching hours-180 hours

PAPER- I 90 Marks

PART A 45 Marks

1. Conceptual study of fundamental principles of Ayurvediya Kriya Sharir e.g -
   Panchamahabutha, Tridosha, Triguna, Loka-Purusha Samya, Samanya-Vishesha. Description
   of basics of Srotas.
   **Applied aspect of basic principles in Sharir Kriya recent practices.**

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 Shadhatupurusha in Kriya
   Sharira and Chikitsa.

   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. **Biochemical basis of Tridosha and its applicability.**

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 Vridhhi, Dosha Kshaya and their manifestations.

8. Concept of Kriyakala, **Biochemical basis of all stages 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.

c) Jatyadi Prakruti

d) Panchabhoutic Prakruti

Clinical application of Prakruti, Application of Prakruti in career guidance, match making etc.

13. Agni – Definition and importance, synonyms, classification, location, properties and functions of Agni and functions of Jatharagni, Bhutagni, and Dhatvagni.

PART- B 45 Marks

Modern Physiology

2. Resting membrane potential and action potential.
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.
5. 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, physiology of hunger, thirst, belching, vomiting.
PAPER-II  90 Marks

PART A  45 Marks

1. Dhatu:
   Etymology, derivation, definition, general introduction of term Dhatu, concept of kala, different theories related to Dhatuposhana (Dhatuposhana Nyaya) and its applied aspect.

2. Rasa Dhatu:

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

4. Mamsa Dhatu:
   Etymology, derivation, synonyms, location, properties and functions of Mamsa Dhatu, physiology of Mamsavaha Srotas, formation of Mamsa Dhatu, characteristics of Mamsa Sara 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 Meda Dhatu, characteristics of Meda Sara 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 Asthi Sara 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 Majja 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-Ashrayi bhava i.e. inter-relationship among Dosha, Dhatu and Srotas and its clinical application.


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; Svpnotpatti and types of Svpna.
Modern Physiology

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.

2. Immunity, classification of immunity: Innate, acquired and artificial. Different mechanisms involved in immunity: Humoral (B-cell mediated) and T-Cell mediated immunity. Hypersensitivity.

3. Muscle physiology – comparison of physiology of skeletal muscles, cardiac muscles and smooth muscles. Physiology of muscle contraction.

4. 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, wound healing

7. Physiology of male and female reproductive systems. Description of ovulation, spermatogenesis, oogenesis, menstrual cycle.


9. Endocrine glands – General introduction to endocrine system, classification and characteristics of hormones, physiology of all endocrine glands, their functions and their effects, physiology of aging.
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 Mala** (Features of Vriddhi- Kshaya)
5. Assessment of Agni
6. Assessment of Koshtha
7. Assessment of Sara
8. **Assessment of Bala**
9. 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. **Measurement of body temperature**
3. Collection of blood sample – prick, vene-puncture method, use of anticoaguants
4. Preparation of blood smear and staining
5. Estimation of Hemoglobin
6. Microscopic examination of blood
   a. Total RBC count
   b. Total WBC count
   c. Differential leucocyte count
7. Packed cell volume (PCV) demonstration
8. ESR demonstration
9. Bleeding time, Clotting time
10. Blood grouping and Rh typing
11. Examination of Cardio-Vascular system
   a. Pulse examination
   b. Arterial blood pressure measurement
   c. Examination of heart sounds
   d. ECG demonstration
12. Examination of Respiratory system
   a. Respiratory rate
   b. Breath sounds
   c. Spirometry

**Distribution of Practical marks**  
(Total – 100 Marks)

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<th>Component</th>
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<tr>
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<tr>
<td>Spotting</td>
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<td>Prakriti Saradi pariksha</td>
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<td>Viva- voce</td>
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**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
- Dosh Dhatu Mala Vigyana - Shankar Gangadhar Vaidya
- Prakrita Dosh Vigyana - Acharya Niranjana Dev
- Tridosha Vigyana - Shri Upendranath Das
- Sharira Tatva Darshana - Hirlekar Shastri
- Prakrita Agni Vignya - 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
- Dosh Dhatu Mala Vigyana - Basant Kumar Shrimal
- Abhinava Sharir Kriya Vigyana - Dr. Shiv Kumar Gaud
- Pragyogik Kriya Sharir - Acharya P.C. Jain
- Kay 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 Vignya - 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
- Sharirkiyavrigan 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
1.3 KRIYA SHARIR

Additional points in existing UG syllabus

PAPER I

PART A

1. Applied aspect of basic principles in Kriya Sharir recent practices
3. Biochemical basis of Tridosha and its applicability
8. Biochemical basis of all stages of kriyakala
9. Prakriti:
   c) Jatyadi Prakriti
d) Panchabhoutic Prakruti
   Clinical application of Prakriti, Application of Prakriti in career guidance, match making etc.

PART - B

3. Cardio-pulmonary resuscitation, physiology of sneezing.
5. Physiology of hunger, thirst, belching, vomiting.

PAPER II

PART A

3. Concept of kala, applied aspect of Dhatuposhana Nyaya
4. Rasa Dhatu: Difference between Aahara Rasa and Rasa Dhatu, applied aspect of Ashtavidha Sara (8 types of Sara)
9. Clinical application of Ashraya-Ashrayi bhava
11. Difference between Dhatu and Upadhatu

PART –B

6. Wound healing
9. Physiology of aging.