DETAILED SYLLABUS FOR THE POST OF ASSISTANT

PROFESSOR IN KRIYASHARIR IN AYURVEDA MEDICAL EDUCATION

(Cat.No. 121/2021)

Detailed Syllabus in module wise with subheadings

Module 1 For 10 marks

- Theory of Pancamahabhuta
- Importance of Samanya – Visesa Principle
- Different views on the composition of Purusa and the importance of Cikitsya Purusa.
- Mutual relationship between Triguna- Tridosa-Pancamahabhuta-indriya
- Biological rhythms of Tridosa on the basis of Day-Night-Age-Season and Food intake.
- Role of Dosa in the formation of Prakrti of an individual.
- **Deha-Prakrti:** Various definitions and synonyms of the term 'Prakrti'.
- Factors influencing the Prakrti. Classification of Deha-Prakrti.
- Characteristic features of the individuals belonging to each kind of Deha-Prakrti.
    - **Vata Dosa:** General locations (Sthana), general attributes (guna) and general functions (Samanya Karma). Five subdivisions of Vata with their specific locations, specific properties, and specific functions (Prana, Udana, Samana, Vyana, Apana)
    - **Pitta Dosa:** General locations (Sthana), general attributes (Guna) and general functions (Samanya Karma). Five subdivisions of Pitta with their specific locations, specific properties, and specific functions (Pacaka, Ranjaka, Alocaka, Bhrajaka, Sadhaka). Similarities and differences between Agni and Pitta.
    - **Kapha Dosa:** General locations (Sthana), 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, Slesaka).
- Applied physiology of Tridosa
- Dosa Vrddhi-Dosa Ksaya.

Module -2 for 10 marks

- **Dhatu Posana:** Process of nourishment of Dhatu. Description of various theories of (Ksira-Dadhi, Kedari-Kulya, Khale Kapota etc).
- **Dhatu:** General introduction and definition of Dhatu. Formation, Definition (Nirukti), Distribution , Attributes, quantity, classification, Pancabhautika composition and Functions of all seven Dhatus in detail: Rasa, Rakta, Mamsa, Meda, Asthi, Majja, Sukra
- Applied physiology of Dhatu: Manifestations of Ksaya and Vriddhi of each Dhatu. Description of Dhatu Pradosaja Vikara.
- Description of Asraya and Asrayi kind of relationship between Dosa and Dhatu.

- **Ojas:** Definition, locations, synonyms, Formation, Distribution, Properties, Quantity, Classification anf Functions of Ojas. Description of Vyadhiksamitva. Bala Vrddhikara Bhava. Classification of Bala. Relation between Slesma, Bala and Ojas.
- Applied physiology of Ojas: Etiological factors and manifestations of Ojaksaya, Visramsa and Vyapat. Physiological and clinical significance of Ojas
- **Upadhatu:** General introduction and Definition of the the term 'Upadhatu'. Formation, Nourishment, Quantity, Properties, Distribution and functions of each Upadhatu.
- **Stanya:** Characteristic features and methods of assessing Suddha and Dusita Stanya, Manifestations of Vrddhi and Ksaya of Stanya.
- **Artava:** Characteristic features of Suddha and Dusita Artava. Differences between Raja and Artava, Physiology of Artavavaha Srotamsi.

- **Physiology of Mala –** Definition of the term 'Mala'. Definition, Formation, Properties, Quantity and Functions of Purisa, Mutra. Manifestations of Vrddhi and Kshaya of Purisa and Mutra.
- **Sveda –** Definition, Formation, Properties, Quantity and Functions of svedavaha Srotamsi. Formation of Sveda. Manifestations of Vrddhi and Ksaya of Sveda.
- **Dhatumala –** Definition, Formation, Properties, Quantity, Classification and Functions of each Dhatumala.

Module 3 for 10 marks

- **Atma** - Definition, Properties of Atma. Difference between Paramatma and Jivatma; Characteristic features of Atma.
- **Buddhi –** Location, types, Functions of buddhi; Physiology of Dhl, Dhrti and Smrti.

- **Manas –** Definition, location (sthana), Properties, Functions and Objects of Manas
- **Nidra –** Definition of Nidra, Classification of Nidra. Tandra, physiological and clinical significance of Nidra; Svapnotpatti and Svapnabheda.
    - **Manas Prakrti:** Types of Manas Prakrti with their characteristic features and its Practical implication, Properties of Satwa, Raja Tamas and their effect on mind.
- **Pancajnanendriya:** Physiological description of Pancajnanendriya and Physiology of perception of Sabda, Sparsa, Rupa, Rasa, Gandha. Indriya-panca-pancaka;
- Sara–Physiological characteristic features of Astavidha Sara.
- Srotas--Description of Rasavaha, Raktavaha, Mamsavaha, Medovaha, Asthivaha, Majjavaha and Sukravaha Srotamsi.

Module -4 for 10 marks

- Ahara: Definition and significance of Ahara. Classification of Ahara. Ahara- Vidhi- vidhana. Asta aharavidhi visesayatana, Aharaparinamakara bhava.
- Aharpachana: Ahara Paka Prakriya, Description of Annavaha Srotas. Description of Avasthapaka and Nishthapaka. Role of dosha in Aharapaka. Sara and Kitta Vibhajana. Absorption of Sara. Utpatti and Udeeran of Vata-Pitta-Kapha.
- Definition of the term Kostha. Physiological classification of Kostha and the characteristics of each kind of kostha.
- Agni: Descripton of the importance of Agni. Classification of Agni. Locations, Properties and functions of Jātharāgni, Bhūtāgni, and Dhātvagni.
    - Applied Physiology of Agni in Kriyā Śārīra and Cikitsā.
    - Descripton of the aetiology and features of annavaha Srotodusti.
    - Applied physiology of Annavaha Srotās: Arocaka, Ajīrna, Atīsāra, Grahanī, Chardi, Parināma Śūla Agnimānda

Module -5 for 10 marks

- Principle of Loka-Purusa Samya

- Importance of Gurvadi Guna in Ayurveda
- Role of Dosa in Health and Disease.

- Principle: Kriyakala,

  - Recent advances in understanding the Prakrti.
  - Brief description related to some of the recent studies exploring the genetic / biochemical / haematological / electrophysiological basis for prakrti.
  - Introduction to the recent tools to assess prakrti (questionnaires and software.)
- Recent studies in biorhythms.
- Recent advances related to the gut microbes and their role in health and disease

Module -6 for 10 marks

- General physiology -Definition and mechanisms of maintainance of Homeostasis. Cell as the living unit of the body. Membrane Physiology. Transportation of various substances across cell membrane. Resting membrane potentials and action potentials.
- Digestive system Physiology 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, peristslsis, defecation etc.) and their control.
  - Role of neuro-endocrine mechanisms in the process of digestion and absorption. Enteric nervous systems.
  - Applied Physiology of gastrointestinal tract: Vomiting, Diarrhoea, Malabsorption etc.
  - Metabolism-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 in human gastrointestinal tract. Adipose tissue and its Function. Circulating lipids. Description of lipoproteins like VLDL, LDL and HDL and their composition.

Module -7 for 10 marks

- **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, Hypothalmus and limbic system.
- Physiology of special senses.Physiology of Intelligence, Memory, Learning and Motivation.
- Physiology of sleep.
- Physiology of speech and articulation.

Physiology of Pain and temperature

- **Endocrinology -**. 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.

Reproductive system

Spermatogenesis and Oogenesis. Hormonal regulation of uterine and ovarian cycles. Physiology of Pregnancy, lactation and Parturition

Module -8 for 10 marks

- **Cardiovascular 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.
- **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.

Module-9 for 10 marks

- **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, RBC

- 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.
- **Physiology of immune system**. Definition and classification of immunity: Innate, acquired and artificial. Mechanisms involved in humoral and cell mediated immunity.
- **Musculoskeletal Physiology***:Physiology of muscles*. Classification of muscles. Electrical and mechanical properties of Cardiac, skeletal and smooth muscles.
- **Renal physiology and skin :-**Physiology of excretion. Functional anatomy of urinary tract.
- Functions of kidneys. Mechanism of formation of urine. Control of micturition. Renal function tests.

Module-10 for 10 marks

- Space Physiology, Exercise Physiology, Physiology of high altitude and deep sea
- Estimation of Hemoglobin
- Aim, principle ,apparatus description ,detailed procedure description of -Total RBC count, Total WBC count, Differential leukocyte count
- Urine analysis-physical examination and chemical examination
- Normal CBC values

Tamas and their effect on mind.

Pancajnanendriya: Physiological description of Pancajnanendriya and Physiology of perception of Sabda, Sparsa, Rupa, Rasa, Gandha. Indriya-panca-pancaka; Physiological description of Karmendriya

- Applied physiology of Dhatu: Manifestations of Ksaya and Vriddhi of each Dhatu. Description of Dhatu Pradosaja Vikara.
- Description of Asraya and Asrayi kind of relationship between Dosa and Dhatu.
- Description of the characteristic features of Astavidha Sara. Description of Rasavaha, Raktavaha, Mamsavaha, Medovaha, Asthivaha, Majjavaha and Sukravaha Srotamsi.

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper