P.G. DEPARTMENT OF KRIYA SHARIR PhD. SYLLABUS

PART -A

Marks-4

1. KRIYA SHARIRATMAKA MOULIK SIDDHANTA

- Theory of *panchamahabhuta*.
- Principle of *lok purush samnaya*.
- Different Views on the composition of *purush* and the importance of *chikitsya purush.*
- importance of *samnaya-vishesh* principle in *Kriya sharir.*
- Concept of *sharir.*

Marks-5

2. DOSHA DHATU and MALA *SIDDHANTA*

- Genral description of *tridosh*a theory. (*vata, Pitta , Kapha*)
- Genral description of *triguna* theory. (*satva, Raja, tama)*
- Mutual Relationship between *triguna-tridosha-Panchamahabhuta –indriya.*
- Biological rhythms of *Tridosha* on the basis of Day-Night - Age - season and food intake.
- Applied physiology of Tridosha principle – in prakriti, KriyaKala, Dosha vridhi. Dosa Kshaya.
- Basic Knowladge of Dhatu and Description of various theories of dhatu poshana (Khsira-dadhi, kedari-kulya, khale kapot, Ek kala)
- Genral description of Sapta dhatu.
- Physiological, clinical and Research oriented approach in dhatu with manifestation of kshaya and vridhhi. Description of dhatu pradoshaja vikara.
- Description of asraya and asrayi kind of relationship between dosa and dhatu .
- Concept of ojas.
- Applied physialogy ot OJas: Etiologial factors and manifestation of oja khsaya,oja visransa, and oja vyapat.
- Physiological and clinical significance of ojas.
- Concept of updhatu and its clinical importance in disease manifestation.
- Concept of mala and dhatu mala with their clinical importance in kriya sharir.

Marks-4

3. PRAKRITI and KRIYAKAL SIDDHANTA

General description of different types of prakriti.

- Recent advances in prakriti analysis using various software parameters.
- Recent studies exploring the genetic aspects of prakriti and genomics and prakriti.
- Basic concept of Kriyakal and its importance in chikitsa.

Marks-4

4. SARA and SROTASH SIDDHANTA

- Description and characteristics feature of Astavidha sara purush.
- Physiological clinical and research-oriented approach in sara.
- Basic Concept of *srotas.*
- Physiological, clinical and research-oriented approach of srotas.

Marks-4

5. AGNI and AAHARPAK SIDDHANTA

- *Agni-: concept of agni and its importance in Aaharapaak*
- *Applied physiological of agni in kriya sharir, and chikitsa.*
- *Description of the aetiology and features of annavaha srotodusti,*
- *Applied physiology of annavaha srotas -: arochaka, ajirna, atisara grahani, chardi, parinam sool , agnimandhya.*
- *Aahara- Defintation and signification of Aahara .Aahara vidhi vidhan, ashta Aahara vidhi visesaytan, Aahara parinamkar bhaav.*
- *Aahara pachan-: Aahara paak prakriya, description of avasthapaak and nishthapaak.*

Marks-4

5. EKADAS INDRIYA SIDDHANTA

- Basic Concept of *panchjyanendriya-mana-atma-buddhi*.

6. NIDRA and SWAPNA SIDDHANTA

- Basic concept of *nidra* and *swapna* with their clinical significance.

PART B

Marks-2

1. CELL PHYSIOLOGY & RECENT ADVANCES-:

- Essentials of cell physiology- Organization of cell.
- Membrane Physiology- Transport across cell membrane, action potentials and resting membrane potentials.
- Physiology of Homeostasis- Definition and mechanism of maintenance of homeostasis.
- Genetic code -Its expression and regulation of gene expression.

Marks-3

2. PHYSIOLOGY OF HAEMOPOETIC SYSTEM & RECENT ADVANCES

- Functions of Haemopoietic system, Composition and functions of blood and blood cells. Hemopoieses- (stages and development of RBCs, WBCs and platelets); Introduction to bone marrow: composition and functions of bone marrow. Structure and functions of hemoglobin, mechanism of blood clotting, study of platelets. physiological basis of blood groups. Principles of blood transfusion, plasma proteins- synthesis and functions. Applied physiology: Anemia, Jaundice.
- Physiology of immune system- Definition and classification of immunity: Innate, acquired and artificial. Mechanisms involved in humoral and cell mediated immunity.

Marks-2

3. PHYSIOLOGY OF CARDIOVASCULAR & RECENT ADVANCES-:

- 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.

Marks-2

4. PHYSIOLOGY OF RESPIRATORY SYSTEM & RECENT ADVANCES-:

- 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

Marks-4

5. PHYSIOLOGY OF GASTROINTESTINAL SYSTEM & RECENT ADVANCES-:

- Description of process of digestion of fat carbohydrates and proteins. Human GI tract. Different digestive juices, their enzyme and their mechanism of action. Function of salivary gland, stomach, pancreas, small intestine, liver and large intestine in the process of digestion and absorption.
- Movement of gut (deglutition, peristalsis, defecation etc.) and their control. Role of Neuro-endocrine mechanism in the process of digestion, absorption, and Metabolism.
- Applied Physiology of GI tract: Vomiting, diarrhea, Malabsorption etc.
- Recent understanding related to the gut microbial and their role in health and disease.
- Introduction to biochemical structure, properties and classification of protein, fat and carbohydrate.
- Description of the process involved in the metabolism of protein, fat, carbohydrate
- Circulating lipids. Description of lipoproteins like VLDL, LDL and HDL and their composition.
- Vitamins: source, daily requirement and function. Physiological basis of signs and symptoms of hypo and hyper – avitaminosis

Marks-2

6. PHYSIOLOGY OF ENDOCRINE SYSTEM & RECENT ADVANCES-:

- 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.

Marks-2

7. PHYSIOLOGY OF MUSCULOSKELETAL SYSTEM & RECENT ADVANCES-:

- **C**lassification of muscles. Electrical and mechanical properties of Cardiac, skeletal and smooth muscles.
- Adipose tissue and its Function.

Marks-2

8. PHYSIOLOGY OF EXCRETORY SYSTEM & RECENT ADVANCES-

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

Marks-1

9. PHYSIOLOGY OF REPRODUCTIVE SYSTEM & RECENT ADVANCES-:

- Spermatogenesis and oogenesis. Hormonal regulation of uterine and ovarian cycle. Physiology of pregnancy and Lactation Pasturition.

Marks-2

10. PHYSIOLOGY OF NERVOUS SYSTEM & RECENT ADVANCES-:

- 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. Function of different parts of brain and spinal cord, Hypothalamus and limbic system.
- special senses, Reflexes.
- Sleep and mechanism of sleep.

Marks-1

11. KNOWLEDGE ABOUT INSTRUMENTS-:

- Physiograph, Computerized spirometry, Biochemical Analyze.
- Pulse oximeter, Elisa Reader, Hematology Analyzer, Tread mill

Marks-2

12. RECENT ADVANCES-:

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