

Course Outcome:

- Enhanced knowledge and appreciation of human physiology.
- Write the functions of important physiological systems including cardio-vascular, excretory, reproductive and digestive systems.
- Identify the movement and coordination of human body, structure and physiology of various muscle systems, hormones and its regulatory functions.
- Write down the interrelationship between various physiological and metabolic processes.

Unit I: Transport and Defence: **Blood: composition, plasma, blood cells, hemoglobin**, blood clotting process, heartbeat, initiation, contraction regulation, **physiology of circulation**. Adipose tissue structure, composition, deposition of triglycerides in adipose tissues, role of brown adipose tissues in thermogenesis. **Immunity: immune response, antibody, cell mediated and humoral immunity**.

Unit II: Movement and co-ordination: Organization of body, structure of skeletal, cardiac, smooth and **physiology of muscle contraction**, structure of brain and neurons, **physiology of nerve impulse conduction**, excitability of membrane, electrical and chemical transmission between cells. **Hormones: classification synthesis, regulatory functions and mechanisms of hormone action (specification)**

Unit III: Digestion: Structure of digestive tract, **regulators of GI activity**, mechanical aspects of digestion, and **transport of major nutrients**. Liver- **role of liver in processing and distribution of nutrients absorbed from small intestine**, **inter relationship of major metabolism in liver**. **Detoxification: Definition. Xenobiotics, enzyme systems involved mechanisms of detoxification. Oxidative stress and anti-oxidants in health free radicals, role of free radicals and anti oxidants in health and diseases.**

Unit IV: Excretion, detoxification and reproduction: Excretion: Internal structure of kidney and nephron, **fluid and electrolyte balance, acid and base balance, physiology of excretion, roles of kidney in body water regulation**. **Reproductive health and nutritional requirements**

REFERENCES

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- Jain A K Text book of Physiology Vol I &II, Avical Publishing Co., New Delhi
- Guyton A C. Hall, J E. 1996. Textbook of Medical Physiology 9th Ed., Prism Books Pvt. Ltd., Bangalore
- Sembulingam, 2009. Text book of medical physiology.