ST.JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

I SEMESTER **BIOCHEMISTRY** Time: 4Hrs/Wk

BCH 1803 (3) **HUMAN PHYSIOLOGY** Marks: 100

w.e.f. 2013-2016('AA' batch) **SYLLABUS**

Objectives: The students will be able to:

- Describe the normal functions of all the organ systems, their regulatory mechanisms and interactions of the various systems for well- coordinated total body function.
- Understand the relative contribution of each organ system in the maintenance of the milieu interior (homeostasis).
- Correlate knowledge of physiology of human reproductive system to Biochemistry.

COURSE:

UNIT I: CARDIOVASCULAR AND LYMPHATIC SYSTEM: Blood components and their function, genesis of Erythrocytes. Resistance of the body to infection: blood groups: the ABO system, the rhesus system, blood clotting factors, intrinsic and extrinsic pathways for blood clotting; composition and functions of lymph and lymphatic system :overall design of circulatory system; pulmonary and systemic circulation.

UNIT II: Respiratory System: Components of respiratory system (nasal cavity, trachea, pharynx, Larynx, lungs, bronchi, bronchioles and alveoli) and their functions; Physiology of respiration : Diffusion of oxygen and CO_2; transport of oxygen; role ofhemoglobin, dissociation curve of oxy hemoglobin and its significance, Bohr's effect; transport of CO_2 and chloride shift; Various buffer system of the blood; Acid-base balance, factors affecting acid-base balance, acidosis and alkalosis, role of lung in regulation of acid-base balance.

UNIT III: Excretory System: Kidney: Structure and its organization. Functions of glomerular membrane and glomerular filtration rate (GFR). Structural and functional characteristics of tubules, selective reabsorption and secretion, role of aldosterone and antidiuretic hormones and mechanism of urine formation.

UNIT IV: Digestive System and Nervous System: Digestion and absorption of carbohydrates, lipids and proteins, role of various enzymes of Hcl formation in stomach. Introduction to gastro intestinal hormones. 2 Types of muscles & muscle physiology.

Organization of the system, Nerve cells, Nerve fibers, Nerve impulses.

Neurotransmission, Synapses: Chemical Electrical synapses, functional properties of nerve fiber, action potential, the reflex action and reflex arc

UNIT V: Endocrine systems :

A brief outline of various endocrine glands (Thyroid gland, Pancreatic gland, steroid hormones, Testis, Ovary) and their physiological roles, feed-back regulation of hormone secretion. Hormone receptors and their activation.

REFERENCES:

1. Best and Taylor (1969), The Living Body, Chapman and Hall, Madras.
2. Oser, B.L. (1961) Hawk's Physiological Chemistry, Tata MC Graw Hill Book Co. Bombay.

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ST. JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAM

SEMESTER I **BIOCHEMISTRY** 3Hrs. /week

BCH1850 (2) **HUMAN PHYSIOLOGY PRACTICALS** Max.Marks:50

w.e.f. 2008-2011(V Batch) **SYLLABUS**

OBJECTIVES: To enable students to -

1. develop skills in techniques of assessing various blood parameters.
2. acquire skills of qualitative analysis.

COURSE:

UNIT I: Detailed study of various tissues – identification of slides.

UNIT II: Blood cells – freshly mounted and stained.

UNIT III: Determination of blood groups.

UNIT IV: Determination of Hemoglobin in blood.

UNIT V: Recording temperature, pulse rate and measurement of blood pressure – effect of exercise.

UNIT VI: Qualitative tests with saliva.

REFERENCES:

1. Best and Taylor (1969), The Living Body, Chapman and Hall, Madras.
2. Pearce E. (1979), Anatomy and Physiology for Nurses, Oxford University Press, Madras.
3. Subrahmaniam S and Kutty M (1979) Text book of Physiology, Orient Longman, Chennai.
4. Animal Physiology by A.K.Berry (Text Book).
5. Langley L.C. (1971).Outline of Physiology; Mac Graw Hill Co., New York.
6. Mc Naught & Calendar E (1970).Illustrated Physiology. W &S.Livingstone ; London

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