

B.Sc. BIOCHEMISTRY SYLLABUS UNDER CBCS
(With effect from 2016-2017)
DSC-1D (Theory)

Paper-IV Hormone Biochemistry and Immunology

CREDITS: 4

MAXIMUM MARKS: 100

Unit I

- 1.1. Introduction to endocrine glands and their secretions. Organization of endocrine system.
- 1.1.1. Classification of hormones. Outlines of chemistry, physiological role and disorders of Pituitary, Pineal, Thyroid and Parathyroid hormones.
- 1.1.2. Signalling molecules: types, nature and function. Signal transduction, second messenger concept (cAMP & Ca^{+2}).
- 1.1.3. General mechanism of hormone action. Hormone receptors (Adrenergic, Glucocorticoid & Insulin).

Unit II

- 2.1. Chemistry, physiological role of the hormones of Pancreas, Adrenal, Gonads and Placenta.
- 2.2. Disorders of the hormones of Pancreas, Adrenal, Gonads and Placenta.
- 2.3. Introduction to Gastrointestinal hormones.
- 2.4. Neurotransmitters - Acetyl Choline, GABA, Serotonin.

Unit III

- 3.1. Organization of Immune system, cells and organs of Immune system.
- 3.2. Classification of Immunoglobulins, structure of IgG. Epitopes/antigenic determinants. Concept of haptens. Adjuvants.
- 3.3. Innate and Acquired immunity. Cell mediated and Humoral immunity
- 3.4. Theories of antibody formation-Conal selection theory. Monoclonal antibodies.

Unit IV

- 4.1. Antigen-antibody reactions-agglutination, Ouchterlony (Single & Double immunodiffusion). Blood group antigens.
- 4.2. Outlines of hypersensitivity reactions. Fundamentals of graft rejection and MHC Proteins. 4.3. Immunodiagnosics-RIA, ELISA.
- 4.4. Vaccines and their classification. Traditional vaccines-live and attenuated, toxoids. Modern vaccines-recombinant and peptide vaccines.