

Subject: Clinical Biochemistry

Effective from academic Session 2017

Semester :1st

Paper: Biomolecules-Structure Function and Metabolism .

Unit I

Carbohydrates: Carbohydrate structure classification, and functions. Glycolysis, Krebs cycle, Pentose phosphate pathway, Gluconeogenesis, Glycogenesis, Glycogenolysis, Regulation of carbohydrate metabolism

Unit II

Amino acids: Structure, classification, peptides and polypeptides primary, secondary and tertiary, quaternary structure; Transamination, oxidative deamination and decarboxylation. Urea cycle, Degradation of amino acids like, tyr, methionine cysteine

Unit III

Lipids: classification, structure and functions of fatty acids, triacylglycerols, phospholipids, sterols, Biosynthesis and degradation of saturated and unsaturated fatty acids, ketone bodies and cholesterol metabolism

Unit IV

Nucleic acids: structure and properties of purines and pyrimidine bases, nucleoside and nucleotides .Biosynthesis and degradation of purines and pyrimidines, Regulation of purines and pyrimidine biosynthesis,

Practicals:

- 1) Preparation of standard Buffers and determination of pH of a solution.
- 2) Qualitative tests for Carbohydrates
- 3) Qualitative tests for Proteins and Amino acids.
- 4) Qualitative tests for Lipids
- 6) Quantitative analysis of proteins by Lowry method.

Books Recommended

1. Principles of Biochemistry by Lehninger, Nelson& Cox
2. Biochemistry by Lubert Stryer
3. Laboratory Manual of Biochemistry & Biotechnology by Syed Eazaz Hussain Rizvi
4. Bioanalytical Chemistry by Syed Eazaz Hussain Rizvi