

# **AMB02 BIOENERGETICS-I**

## **UNIT-1 BIOCHEMICAL EVOLUTION**

Chemogeny, Biogeny, and Evolution of Chromosome Organization and Genetic Regulatory Mechanisms, Time factors in evolution, Evolution of Enzyme Systems.

## **UNIT-2 AMINO ACIDS AND PEPTIDES**

Structure, Function, Methods of Characterization, Separation Techniques based on their structure and properties, Clinical Significance, Biosynthesis.

## **UNIT-3 CARBOHYDRATES**

Mono and Polysaccharide, Classification, Structure, Function, Separation and Characterization Techniques, Clinical significance, Biosynthesis.

## **UNIT-4 LIPIDS**

Classification, Structure, Function, Separation and Characterization Techniques, Clinical Significance.

## **UNIT-5 NUCLEIC ACIDS**

Nucleic Acids and Polynucleotides, Classification, Structure, Function, Separation and Characterization Techniques, Clinical Significance.

## **UNIT-6 VITAMINS AND MICRO AND MACRO NUTRIENTS**

Classification, Structure, Function, Separation and Characterization Techniques, Clinical Significance.

## **UNIT-7 BIOCHEMICAL ENERGETICS:**

Energy Yielding and Energy Requiring Reactions, Calculations of Equilibrium Concentrations, Oxidation-Reduction Reactions, Metabolism and ATP Yield. Photosynthetic Phosphorylation, Active Transport, Second Law of Thermodynamics, Enthalpy and Entropy, Activation Energy.

## **UNIT-8 SPECTROPHOTOMETRY AND OTHER OPTICAL METHODS:**

Spectrophotometry, Flurometry, Optical Rotation - Polarimetry, Photochemistry, and Quantum efficiency.

### **Reference Books:**

1. Biochemistry by Lubert Stryer. W. H. Freeman & Company, NY
2. Biochemistry by Lehninger. McMillan publishers
3. Biochemistry by Zubey. Wm. C. Brown publishers