

**BIOCHEMISTRY**

**UNIT – I** (15 Hrs)

- 1.1 The living cell : Cell membrane and organelles. Functions of major sub cellular components. Plant and animal cells. Anabolism and catabolism and their relation to metabolism
- 1.2 Nucleic acids : Nucleoproteins – elements of genetics – geniticcode. Nucleotides, difference Between DNA and RNA. Different types of RNA. Role and Structure of Nucleic acids.

**UNIT – II** (15 Hrs)

- 2.1 Metabolism : Digestion and absorption of carbohydrates – Metabolism of carbohydrates – an Aerobic path way – TCA cyle – Pentose phosphate shunt – glycogenesis – glycogenolysis – glyconeogenesis – Maintenace of blood sugar level – inter relationship between carbohydrates, proteins and lipids. Estimation of glucose in blood. Digestion and absorption of proteins. Determination of amino acid sequences. Digestion and absorption of lipids.

**UNIT – III** (15 Hrs)

- 3.1 Vitamins : Functions, source and deficiency diseases of vitamin A,D,E,K ascorbic acid and B Complex.
- 3.2 Enzymes : Nomenclature and classification – Properties of enzymes, factors that influence enzymic reaction rate – coenzymes, isoenzymes, cofactors, activators and inhibitors. Isomerisation, hydroxylation, phosphorylation, transamination deamination, decarboxylation, Acetylation and methylation – clinical and industrial applications of enzymes.

**UNIT – IV** (15 Hrs)

- 4.1 Hormones : Classification, definition and biological functions – adrenaline, thyroxine – general Idea about oxytoxin and insulin and sex harmones – Disorders of hypo and hyper secretion of harmones.
- 4.2 Rool of Drugs : The action of drugs – Antibiotics, aspirin and analgesics, Narcotic analysis, Anesthetics, sedatives – hypnotics and alcohol stimulants. Drugs and the autonomic nervous system.

**Treatment of cancer and diabetes.**

**UNIT – V** (15 Hrs)

- 5.1 Blood : Composition, functions, RBC – structure, functions, Haemoglobin, WBC – Structure, Functions, Blood Groups – Rh factor,

Blood coagulation, mechanisms, identification and estimation of cholesterol in blood.

- 5.2 Biochemical Techniques : Chromatography, electrophoresis, Spectrophotometry, isotopic methods - Manometric techniques, sedimentation and dialysis.

**REFERENCES :**

1. S.C.Rastogi, Biochemistry, Tata Mcgraw – Hill, New Delhi, 1993.
2. Lehninger, A.L.Bioenergetics W.A.Benjamin, NewYork 2<sup>nd</sup> Ed. 1971.
3. Ambika shanmugam, Fundamentals of Biochemistry for medicines.
4. West, Todd, Mason and Bruggen, Tex Book of Biochemistry.