Metabolism BVOMLT-303

**UNIT I**

Carbohydrate Metabolism Digestion & Absorption of Carbohydrates : Metabolic Pathways of Carbohydrates, Glycolysis and alcoholic fermentation, The Pentose Phosphate Pathway, Glucuronate and glyoxylate pathway, TCA cycle, Glycogenolysis & Glycogenesis, Gluconeogenesis, Biosynthesis of starch, Biosynthesis of Ascorbic acid.

**UNIT II**

Lipid Metabolism Digestion & Transport of Lipids : -Oxidation of fatty acids including odd chain fatty acids. α -and ω- oxidation of fatty acids Degradation of triglycerides and phospholipids. Formation and utilization of ketone bodies. Biosynthesis of saturated and unsaturated fatty acids. Biosynthesis of triglycerides and phospholipids, biosynthesis of cerebrosides; sulfatides and gangliosides. Biosynthesis of Cholesterol. Biosynthesis of Prostaglandins, Thromboxanes, Leukotrienes, Lipoxins and Prostacyclins.

**UNIT III**

Protein Metabolism Digestion of Proteins : General Reactions of Amino Acids : Deamination, transamination and decarboxylation. Urea cycle. Catabolism of Carbon Skeletons of Amino Acids : Glycine and Alanine, Serine and threonine, Phenylalanine and Tyrosine, Tryptophan, Histidine, Leucine, Valine and Isoleucine, Cysteine and Methionine, Lysine, Glutamic acid and Glutamine, Aspartic acid and Asparagine. Biosynthesis of Nutritionally Non-Essential Amino Acids : Glutamate and Glutamine, Aspartate and Asparagine, Proline, Alanine, Cysteine & Selenocysteine, Tyrosine, Serine, Glycine.

**UNIT IV**

Nucleic Acids Nucleic Acids : Degradation of purines and pyrimidines. Biosynthesis of purines, pyrimidines and nucleotides. Catabolism of Heme & Formation of Bile pigments. Biosynthesis of porphyrins and heme. Conjugation of bilirubin and its clinical significance.