Biochemistry BVOCOP-204

**Unit-1:**

**Carbohydrates:** Glucose; fructose; galactose; lactose; sucrose; starch and glycogen (properties and tests, Structure and function), Proteins: Amino acids, peptides and proteins (general properties & tests with a few examples like glycine, tryptophan, glutathione, albumin, hemoglobin and collagen). Lipids: Fatty acids, saturated and unsaturated, cholesterol and triacylglycerol, phospholipids and plasma membrane

**Unit-2:**

**Vitamins:** General with emphasis on A, B2, C, E and inositol (requirements, assimilation and properties), Minerals: Na, K, Ca, P, Fe, Cu and Se. (requirements, availability and properties) Hormones:Hormones and their receptors basic concepts in metabolic regulation with examples, insulin, glucagon and thyroxin. Metabolism: General whole body metabolism (carbohydrates, proteins, lipids)

**Unit-3:**

**Ocular Biochemistry:** Various aspects of the eye, viz. tears, cornea, lens, aqueous, vitreous, retina and pigment epithelium rhodopsin. (The important chemicals in each and their roles). Clinical Biochemistry: Blood sugar, urea, creatinine and Bilirubin, cholesterol etc. and significance of their estimation.

**Textbook:**

1. S. Ramakrishnan, Essentials of biochemistry and ocular biochemistry, Annamalai UniversityPublications, Chidambaram, India, 1992

**Reference Book:** 1. S. Ramakrishnan, KG Prasannan and R Rajan: Textbook of Medical Biochemistry, Orient Longman, Madras,1990.

2. D.R. Whikehart Biochemistry of the Eye, 2nd edition, Butterworth Heinemann, Pennsylvania,2003