Subject: **Clinical Biochemistry, Nutrition and Immunology**

**Unit-I: Clinical Biochemistry**
Clinical importance of Enzymes and isoenzymes  
Normal values for different blood tests and clinical implications  
Clinical diagnosis of human diseases: anaemia, thalassemia, hyper cholesterolemia, atherosclerosis, diabetes, Pregnancy test  
Liver function tests: conjugated and total bilirubin in serum, albumin: globulin ratio  
Liver diseases: jaundice, hepatitis.

**Unit-II: Nutrition**
Biological buffers. Acid base balance  
Balanced diet, Calorific values of foods and their determination by bomb calorimeter  
Specific dynamic action of foods, BMR, RDA for infants, children, adults and expectant / nursing mothers, Malnutrition (PEM, Marasmus, Kwashiorkor), Eating disorders; Anorexia and bulimia; Obesity and Starvation.

**Unit-III: Immunology-I**
History of immunology, Classification, structure, and biological properties of immunoglobulins, Isotypes, allotype, idiotypes  

**Unit-IV: Immunology-II**
Humoral & cell-mediated immune response  
Activation of T cells & B cells. MHC proteins structure & functions  
Antigen processing & presentation, Hypersensitivity, Auto immune diseases; classification  
Production of monoclonal antibodies  
Immunoprecipitation methods - gel diffusion (Ouchterlony; Mancini); Immune-electrophoresis (Rocket), Agglutination tests, ELISA, RIA, Western Blots;