Department of Biochemistry, UCS&I, MGU, Nalgonda
Semester – IV, Interdisciplinary paper-II (C.B.C.S)
w.e.f 2015-16 admitted Batch

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 bilurubin 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.
Natural & acquired immunity, Specific & non-specific immune response. Cells & organs of immune system, Antigenic determinants, Epitopes, Haptens, Properties of strong antigens, Adjuvants – types, mode of action and applications.

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;