

UNIT WISE CONTENT (BSCZO302)

Block I: Microbiology

Unit 1: Diversity of Microbes

Kinds of Microbes, Viruses, Archaea, Bacteria, Eukaryotic microorganisms and typical structure of bacterium and a virus.

Unit 2: Culture of Microbes

Sterilization, disinfection, culturing, media preparation, Isolation, culturing, growth and identification of microorganism.

Block II: Immunology

Unit 3: Overview of Immune System

Innate, Adaptive (cell mediated and humoral), Active and Passive immunity (Artificial and Natural).

Unit 4: Cells and organs of immune system

Organs of immune system: Primary and secondary lymphoid organs and lymphatic system

Unit 5: Humoral immunity

Antigen: Antigenicity, Adjuvants and Haptens. Immunoglobulins: types structure and function. Complement system (antigen – antibody reactions)

Unit 6: Cell mediated immunity

Structural organization of MHC complex, Antigen processing and presentation. Functions of T-cells

Unit 7: Applications of Immunology

Brief introduction to Vaccines, Immunodiagnosis and Immunotherapy

Block III: Toxicology

Unit 8: Toxin

Kind and source of toxic agents: Synthetic organic compounds, natural occurring toxins, inorganic chemicals. Dose- response relationship. Routes of entry. Environmental movement and fate of toxin. Mode of action: chronic, Natural poisons.

Unit9: Analytical toxicology: Toxic responses of blood. Organ function tests, teratogenic, reproductive and carcinogenic tests.