

AMBT07 IMMUNOLOGY

UNIT-1 INTRODUCTION TO IMMUNOLOGY

Properties of immune response, Innate and acquired immunity, active and passive immunity.

UNIT-2 CELLS & TISSUES OF IMMUNE SYSTEM

Lymphocytes, Classes of lymphocytes, antigen presenting cells, NK Cells, Mast Cells, Dendritic Cell, Organs of the Immune System, Bone marrow, Thymus, Lymph node, Spleen, CALT, MALT.

UNIT-3 MOLECULAR IMMUNOLOGY

Molecular structure of antibody, Classification, Isotypes, Synthesis assembly and expression of immunoglobulin molecules, Nature of antigens, function and diversity, Generation of anti-body diversity.

UNIT-4 ANTIGENS

Different characteristics of antigens, mitogens, Hapten, Immunogen, Adjuvants.

UNIT-5 MHC

Discovery of MHC complex, Role of MHC, Structure of MHC molecule, Binding of peptides to MHC molecules, MHC restriction.

UNIT-6 EFFECTER MECHANISM OF IMMUNE RESPONSE

Cytokines, T- cell receptors, cell activation, complement system, antigen processing and presentation, regulation of immune response.

UNIT-7 IMMUNOLOGICAL TECHNIQUES

Antigen- antibody reactions, Immuno diffusion, immunoelectro- phoresis, ELISA, RIA, fluorescence activated cell sorter,

UNIT-8 APPLIED IMMUNOLOGY

Immune system in health and disease, autoimmunity, hypersensitivity, tumor immunity, tissue and organ transplant, Synthetic vaccines.

UNIT-9 HYBRIDOMA TECHNOLOGY

Fusion of myeloma cells with lymphocytes, production of monoclonal antibodies and their application.

Reference Books

1. Kuby- Immunology (4th Edition) by R. A. Goldsby, T.J. Kindt, B.A. Osborne.
2. Essentials of Immunology (6th Edition): Ivan Riort- Blakswell Scientific Publications, Oxford, 1988.