

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Biomedical Science)
Semester: IV
Syllabus with Effect from: June - 2014

Paper Code: PT04EBMC02	Total Credit: 4
Title of Paper: Immunobiology	

Unit	Description in Detail	Weightage (%)
I	Immune system: Introduction, Innate and acquired Immunity, Active and passive Immunity, natural and artificial Immunity Lymphoid system: Lymphoid Tissue: Primary or Secondary Organs, Lymphocyte Traffic Cells Involved In the Immune Response: Lymphocytes, Mononuclear Phagocyte, Antigen- presenting cells, Polymorphs and mast cells Cluster designation (CD): Ag specific receptors.	25%
II	Antigen and antibody: Antibody Generation, structure and Function, Humoral immunity, Clonal Selection Theory, Immunoglobulin, Antibody Structure and Function, Antibody Effector Mechanism, Antibody Receptors, Antibody Diversity, Immunoglobulin Gene Recombination: Ab Class switching, Isotype switching, Effect of Somatic Mutations on the Antibody Diversity, Primary and Secondary immune Responses: Affinity Maturation & Memory cells development	25%
III	Complement System: Nomenclature, Activation pathways and its biological effects. Major Histocompatibility Complex: Structure and function of different MHC classes, Cell Mediated Immune Response: T -Cell independent and dependant defense mechanisms, Cell Mediated Cytotoxicity Cytokines Network: Molecular basis of t- cell activation, Structure and function of various cytokines, cytokine receptors, Regulation of Immune Response: Role of Antigen, APC, Antibody, Lymphocytes into immune response regulation, Genetic Immune Response Regulation. Cell Migration and Adhesion: Structure and function of various adhesion Molecules, Mechanism of Cell Migration and their involvement in disease	25%
IV	Immunopathology: Erythroblastosis fetalis, Genetic and acquired Autoimmune and (AIDS) Immunodeficient disorders, Hypersensitivity Reactions: different types and Role of IgE, Mast cells, Genetic Allergic Response, Antigen Antibody Interaction: Haemagglutination, Direct/ indirect Immunofluorescence, Hybridoma Technology for Mab Production, Cancer Immunology, Vaccines: Principle, method of preparation and their mechanism of action.	25%

Basic Text & Reference Books:-

- Goldsby R. A., Kindt T. J., Osborne B. A., Text book of Immunology, W. H. Freeman and Company
- Delves P. J., Martin S. J., Burton D. R., Roitt I. M., Text book of Immunology, Wiley Blackwell Publications
- Doan T., Melvold R., Viseli S., Immunology, LWW Publishers

