

6th Semester		Immunology and Immuno- Technology	L-T-P 3-0-0	3 Credits
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MODULE-I Introduction, Phylogeny of Immune system, Innate and acquired Immunity, Clonal nature of Immune response. Hematopoiesis: Origin and differentiation of Lymphocytes and phagocytic cells- receptors and signals that control lymphocyte lineage commitment, Organization and Structure of Lymphoid Organs,

MODULE-II Innate and acquired immunity. Elements of Immunity – B lymphocytes and thymus derived (T) Lymphocytes. Activation and regulation of B and T lymphocytes. Nature and Biology of antigens and super antigens. complement system

MODULE-III Immunoglobulins - Classes and subclasses, organization and expression of immunoglobulin genes. Immunoglobulin gene rearrangement –antibody diversity TCR, TCR diversity, T cell receptor gene rearrangement. Classes of MHC, Molecular structure and assembly of MHC molecules, Antigen presenting cells- antigen processing and presentation, Cytokine and their role in immune regulations

MODULE-IV Cell-mediated cytotoxicity, Mechanism of T cell and NK cell mediated lysis, Antibody dependent cell mediated cytotoxicity, and macrophage mediated cytotoxicity, Hypersensitivity reactions, Immunological tolerance- B & T cell tolerance. Autoimmunity: - an overview of the immunopathogenic mechanisms of autoimmunity. Immunity to infectious agents (intracellular parasites, helminthes and Viruses) AIDS and other immunodeficiency diseases. Tumors: Immune response to tumors-types of tumor antigens. Transplantation , immunosuppressive drugs,.

MODULE-V Vaccine technology: Rationale of vaccine designing based on clinical requirements, vaccine types, Hybridoma technology, ELISA, ELISpot, Immunofluorescence, Flow Cytometry, immunohistochemistry,

Books

1.	Goldsby. R.A, Kindt.T.J, Kuby J and Osborne BA, Immunology, 7th Eds. W.H. Freeman Pubn. New York 2014.
2.	Abbas K A, Litchman A. H. Cellular and Molecular Immunology. 8th Eds., W. B. Saunders Co. 2015
3.	Judy Owen , Jenni Punt , Sharon Stranford , Patricia Jones Kuby, immunology 8th Eds.W.H. Freeman Pubn 2018.
4.	C. A. JanewayJr, P. Travers. Immunobiology, 8th Ed, Lecture spring Pub. 2014.
5.	Roitt I.M., Brostoff. J, Male. D.K. Immunology, 7th B. K. & Cdreds, Garland Pub Ltd. 2014.