

M.Sc Microbiology Semester-IV

Paper CC X: Immunology

Full marks-70

Group A- Short answer questions (Answer any two)

10x2=20

1. Define immunogens and antigens. Discuss the conditions of antigenicity and concept of haptens.
2. Explain the process of ELISA-PCR.
3. Discuss immunodeficiency with special reference to AIDS.
4. What is vaccine? What are the effectiveness and adverse effect of vaccines ? What type of antigens generally used in vaccine.
5. Explain cell signalling through MAP-kinase and NF-kB pathway.
6. Write short notes on any of the two.
 - a) DNA vaccine
 - b) NK-DC interaction
 - c) Transgenic animals for xero-transplantation.
 - d) Role of TNF and INF in immune mechanism.

Group B- Long answer questions (Answer any two)

25x2=50

1. What are T and B lymphocytes? Discuss their properties and functions. Explain lymphocyte trafficking process in detail.
2. Discuss the process of hybridoma technology for the production of monoclonal antibodies. Explain multiple myelomas and structural basis of antibody diversity
3. What are Major Histocompatibility Complex? Explain the genetic organization of MHC class I and MHC class II molecules and their functions in detail.
4. What are cytokines. Explain different categories of cytokines and mention their roles in immune system and its regulation.
5. Explain humoral and cell mediated immune response, elements of innate immunity and pattern recognition.
6. Describe transplantation and its types. What is a graft rejection and pattern of graft rejection? What is the mechanism and prevention of graft rejection?