

[illegible]

Total No. of Questions : 08

Paper ID : [E0912]

Max. Marks : 100

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

- Q1
 - a. Describe the thymus dependent and independent B cell activation. Also explain the role of costimulatory signals in B cell activation.
 - b. Describe the pathway involved in processing and presentation of intracellular antigens.
- Q2
 - a. Describe the important steps of ELISA.
 - b. How cell cytotoxicity assay is being carried out? Write the principle of any cell cytotoxicity assay.
- Q3
 - a. Explain the hypersensitive reaction which is associated with serum sickness.
 - b. How molecular mimicry and release of sequestered antigen contribute auto- immune response? Explain it with examples.
- Q4
 - a. Differentiate between live and killed vaccine. Give some examples of the vaccines that belong to these categories. With one example, write the preparation of live vaccine.
 - b. How monoclonal antibody is prepared? Differentiate between chimeric and hybrid monoclonal antibody.
- Q5
 - a. Differentiate between primary and secondary immunodeficiency. With two examples explain primary immunodeficiency.
 - b. Describe the role of different immune cells in controlling cancer. Discuss one strategy of cancer immunotherapy.

- Q6 a. “*Systemic lupus erythematosus and Rheumatoid arthritis are example of type III hypersensitive reaction and systemic autoimmune disease*”. Justify this statement, mentioning the immune reactions that take place in both diseases.
- b. Discuss different immune responses in combating viral infection.
- Q7 a. Justify with experiments that $CD4^+$ and $CD8^+$ T cells participate in allograft rejection. Also write about the mixed lymphocyte reaction,
- b. Write the different properties of cytokines. Also write the role of any two cytokines in immune regulation.
- Q8 a. Describe the Antibody dependent cell mediated cytotoxicity and Cytotoxic T cell response.
- b. Write the role of Recombination signal sequence (RSS). Write the significance of two types of RSS. Also explain deletional and inversional joining.