



CBCS SCHEME

21BT52

Fifth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Immunotechnology + Lab

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Classify and elaborate on different types of cells of immune system. (10 Marks)
b. With neat labeled diagram, discuss the structure and functions of spleen. (10 Marks)

OR

- 2 a. Give an account of different barriers of innate immunity. (10 Marks)
b. Classify different types of immunoglobulins. Explain the structure and functions of IgM in detail. (10 Marks)

Module-2

- 3 a. Explain the activation process of T lymphocytes and their mechanism in response to an antigen. (10 Marks)
b. Immunoglobulin gene rearrangement mechanism creates antibody diversity. Justify the statement. (10 Marks)

OR

- 4 a. Prepare the protocol for the production of monoclonal antibodies and add a note on their applications. (10 Marks)
b. Differentiate between class I MHC and class II MHC. (10 Marks)

Module-3

- 5 a. Classify the complement activation pathway. Explain the classical pathway of complement activation. (10 Marks)
b. Define and classify hypersensitivity. Discuss Type IV – delayed hypersensitivity with 2 examples. (10 Marks)

OR

- 6 a. List different autoimmune disorders. Elaborate on the mechanism behind Rheumatoid arthritis. (10 Marks)
b. Classify Vaccine. Explain the production of recombinant vaccines with an example. (10 Marks)

Module-4

- 7 a. Define Graft. Classify graft and illustrate the bone marrow transplantation steps. (10 Marks)
b. What is Allograft Rejection? Describe the mechanism involved in it. (10 Marks)

OR

- 8 a. Give an account of immunotherapy for tumor. (10 Marks)
b. What is tissue typing? Explain the methods involved in the tissue typing for the detection of HLA antigens. (10 Marks)

Module-5

- 9 a. Explain the principle of ELISA and discuss the variants of ELISA with suitable diagram. (10 Marks)
- b. What are stem cells? Enumerate the applications of stem cells in immunology. (10 Marks)

OR

- 10 a. Elaborate on the production of humanized monoclonal antibodies. (10 Marks)
- b. Write short notes on :
- i) ABO and Rh blood groups. (10 Marks)
- ii) Immuno electrophoresis. (10 Marks)
