PG Even Semester Exam, May 2025

Biotechnology

2nd Semester

COURSE NO. BTYCC - 551

[Immunology]

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer five questions, taking one from each Unit

UNIT-I

1. a. Differentiate between: 3.5x2=7
   i. Passive and active immunity
   ii. Primary and secondary lymphoid organs.
   b. Write short notes on: 3.5x2=7
   i. Bone marrow as a lymphoid organ
   ii. Neutrophils and their functions
2. a. Write a brief note on the non-specific host defences. 7
   b. Chalk out the different functions of macrophages. 7

UNIT-II

3. a. Differentiate between humoral and cell-mediated immunity. 7

   b. Chalk out the classical pathway of complement activation. 7

4. a. Define cytokines. State their properties and functions with examples. 2+4+4=10

   b. Illustrate the structure of BCRs. 4

UNIT-III

5. a. Write brief notes on: 3x 2=6

   a. MHC-I and II

   b. Inflammation

   b. Differentiate between endocytic and cytosolic pathways of antigen processing. 8

6. a. Differentiate between: 3x2=6

   i. Exogenous and endogenous antigens

   ii. T helper cells and T cytotoxic cells

   b. Briefly discuss the generation of antibody diversity. 8

UNIT-IV

7. Discuss the pathogenesis of the following: 3.5x4=14

   a. DiGeorge syndrome

   b. Nezelof syndrome

   c. SLE

   d. Contact dermatitis induced by poison ivy

8. Describe the following in details:

   a. Immune system evasion by tumor cells 5

   b. Type II hypersensitivity 5

   c. Pathogenesis of pernicious anemia 4

UNIT-V

9. Write notes on: 7x2=14

   a. Electron microscopy

   b. Fluorescence microscopy

10. What is apoptosis? Describe three methods for measuring apoptosis. 2+12=14

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