

B.TECH DEGREE EXAMINATIONS: NOV / DEC 2010

Seventh Semester

BIOTECHNOLOGY

U07BT702: Immunology

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 1 =10 Marks)

1. Which of the following does not protect body surfaces?
a) Skin b) Mucus c) Gastric acid d) Salivary amylase
2. The mononuclear phagocyte system does not include:
a) Monocytes b) Kupffer cells c) Kidney mesangial cells d) Endothelial cells
3. Ig idiotypes are found:
a) In the variable region of both heavy and light chains
b) In the constant region of the light chain
c) In the hinge region
d) Only in the light chain
4. Which of the following statements is incorrect? Affinity is:
a) A measure of the strength of the binding of antigen to antibody
b) The association constant of the Ag/Ab equilibrium
c) Related to the free energy change of the Ag/Ab interaction
d) Related to specificity
5. Cells bearing MHC class I plus peptides are targets for specific:
a) B-cells b) Cytotoxic T-cells c) TH₂ cells d) Interdigitating dendritic cells
6. Relative to males, females:
a) Are less resistant to T-cell tolerance
b) Produce lower antibody responses to T-independent antigens
c) Are more susceptible to autoimmune disease
d) Have lower levels of secretory IgA
7. Antibody titer refers to the:
a) Highest dilution of antibody still able to give a positive result in a test system
b) Affinity of specific antibody
c) Avidity of specific antibody
d) Concentration of specific antibody
8. Which of the following is not used for the precipitation of immune complexes?
a) Nephelometry b) Polyethylene glycol c) Ammonium sulfate d) Staphylococci
9. A graft between members of the same species is termed as:
a) Autograft b) Isograft c) Xenograft d) Allograft

10. The immunosuppressive drug which probably attacks DNA by alkylation and cross-linking is:
- a) Azathioprine b) Cyclophosphamide c) Cyclosporine d) Rapamycin

PART B (10 x 2 = 20 Marks)

11. Classify - inflammation.
12. What is the main function of dendritic cells?
13. Name any two haptens that are commonly used in molecular biology applications.
14. Which immunoglobulin is said to be maternal antibody?
15. How NK cells kills virus infected cells?
16. What are phagolysosome?
17. What are adjuvants?
18. Differentiate affinity and avidity.
19. List the major types of graft transplants.
20. What is Methotrexate?

PART C (5 x 14 = 70 Marks)

21. a) Compare active and passive acquired immunity and explain the theories of immune response.
(OR)
b) Describe the anatomy and functions of lymph node and spleen and add a note on types of antigens.
22. a) Compare the structural and biological properties of various immunoglobulin. (OR)
b) Explain in detail the hybridoma technology.
23. a) Explain in detail the classical and properdin pathway of complement system. (OR)
b) Give a brief account on cell mediated immunity.
24. a) Write Short notes on
(i) Types of immunoelectrophoresis (7)
(ii) Types of antigen - antibody reactions (7)
(OR)
b) Describe in detail the various types of ELISA.
25. a) Give a brief account on the types and mechanism of hypersensitivity reactions. (OR)
b) Give a brief account on organ and non-organ specific autoimmune diseases.
