



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION - PLANT BIOLOGY & PLANT BIO-TECH.

FIFTH SEMESTER – NOVEMBER 2011

PB 5406 - IMMUNOLOGY AND IMMUNOTECHNOLOGY

Date : 12-11-2011
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

Part –A

(20 marks)

Answer all the questions.

I. Choose the correct answer

(5x1=5 marks)

1. A hapten is a
a) small molecule attached to a protein b) antibiotic
c) amino acid side chain d) carbohydrate side chain
2. The immunoglobulin that activates complement upon binding with antigen is
a) IgM b) IgD c) IgA d) IgE
3. A major role of IL-4 is to promote the
a) IgG responses b) IgE responses c) IgM responses d) macrophages activation
4. The first monoclonal antibody to be licensed was _____.
a) OKT3 b) CEA-Scan c) CEA-Cide d) HuMax-CD4
5. Cytokines with chemotactic activities are called
a) monokines b) lymphokines c) chemokines d) interleukins

II. State whether the following statements are TRUE or FALSE

(5x1=5 marks)

6. Two domains are present in the light chain of immunoglobulin structure.
7. Immediately following a break in the skin, phagocytes engulf bacteria within the wound. This is an example of an adaptive immune response.
8. IgM immunoglobulin class is first to be synthesized in an immune system response to pathogen.
9. Thymidine kinase is involved in the salvage pathway of purines.
10. 95% of T cells express the α - β heterodimer.

III. Complete the following.

(5x1=5 marks)

11. When agglutination reactions are done with RBC they are termed as _____.
12. _____ antibodies are involved in secondary antibody response.
13. The antigen combining site of an antibody molecule determines its _____.
14. T cells are responsible for _____ immunity.
15. Each light chain is bound to a heavy chain by _____ bond.

IV. Answer the following each within 50 words.

(5x1=5 marks)

16. Define paratope.
17. Define antigens.

18. What is the function of suppressor T cells?
19. Define cell mediated immunity.
20. How hybridomas are selected?

Part B

(5x7=35 marks)

V. Answer the following each within 350 words. Draw diagrams wherever necessary.

21. a) Give the general structure of immunoglobulin.
OR
b) How will you isolate serum from blood?
22. a) Explain radioimmunoassay technique.
OR
b) Difference between agglutination and heamagglutination.
23. a) Explain the steps involved in western blot.
OR
b) Briefly explain innate and adaptive immunity.
24. a) Explain primary and secondary immune response.
OR
b) Define cytokines. Explain the properties of cytokines.
25. a) Explain the production of polyclonal antibodies.
OR
b) Define hybridoma technology. Explain the choice of cells and the pathways involved in it.

Part C

(3x15=45 marks)

VI. Answer any three of the following within 1200 words. Draw diagrams wherever necessary.

26. Explain the types of immunity.
27. Explain antigen-antibody interaction.
28. Explain B and T lymphocytes.
29. Discuss the applications of monoclonal antibodies.
30. Explain the different types of immunoglobulins.

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