

B.TECH DEGREE EXAMINATIONS: NOV/DEC 2014

(Regulation 2009)

Seventh Semester

BIOTECHNOLOGY

BTY123: Basic Immunology

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

- Who introduced the concept of variolation to England?
 - Louis Pasture
 - Edward Jenner
 - John Conner
 - Wortley Montague
- Who first described about phagocytosis?
 - Ernst Haeckel
 - Ilya Mechnikov
 - Emil Behring
 - John Carter
- Which is the smallest antigen?
 - p-Benzoi acid
 - Urushiol
 - Aniline
 - Hydralazine
- What is the maximum valance of an antibody?
 - 2
 - 4
 - 5
 - 10
- Antibody titer refers to the_____
 - Absolute amount of specific antibody
 - Affinity of specific antibody
 - Avidity of specific antibody
 - Highest dilution of antibody still able to give a positive result in a test system
- The association constant (K_a) at equilibrium is represented by_____
 - [AgAb complex]
 - [free Ag][free Ab]
 - [AgAb complex]/[free Ag][free Ab]
 - [free Ag][free Ab]/[AgAb complex]
- CD8 is a marker of_____

- a) Helper T-cells
 - b) Cytotoxic T-cells
 - c) An activated macrophage
 - d) A neutrophil precursor
8. Cytokines always act
- a) By binding to specific receptor
 - b) In an autocrine fashion
 - c) At long range
 - d) Synergistically with other cytokines.
9. The β chain of the Fc ϵ RI
- a) Binds IgE
 - b) Is associated with Lyn
 - c) Contains a GPI-anchor
 - d) Possesses an ITIM sequence
10. The human major histocompatibility complex
- a) Provokes the most intense allograft reactions.
 - b) Contains only class I and class II genes.
 - c) Is not expressed as codominant antigens on the cell surface.
 - d) Encodes the human leukocyte antigens (HLA) expressed only on leukocytes.

PART B (10 x 2 = 20 Marks)

11. Write note on hematopoiesis.
12. Draw neutrophil and lists its function.
13. Define hapten. give example.
14. Differentiate between isotypes, allotypes and idiotypes.
15. Distinguish between affinity and avidity.
16. Write a note on cross reactivity.
17. Outline the significance of NK cells.
18. List few effectors molecules of cell mediated reactions.
19. Name few autoimmune diseases.
20. Give the immunological basis of graft rejection.

PART C (5 x 14 = 70 Marks)

21. a) Describe in detail about the innate and adaptive immunity.
- (OR)**
- b) (i) Elucidated the role of thymus and bone marrow in immune system. (8)
- (ii) Write a note on MALT, GALT, CALT. (6)
22. a) (i) Write about T-dependent and T-independent antigens. (8)
- (ii) Explain about B and T cell epitopes. (6)

(OR)

b) Give in detail about the structure and function of any two antibodies.

23. a) What is immunoelectrophoresis, explain how this technique is exploited in immunodiagnostics?

(OR)

b) Discuss the Production methodology & application of Hybridoma technology.

24. a) Write in detail about various types of cell mediated immunity and its functions.

(OR)

b) Describe in detail about the complement pathways.

25. a) Explain in detail about the organ specific and systemic autoimmune diseases.

(OR)

b) (i) List and write about the types of tumor and tumor antigens. (10)

(ii) How immune system react to tumor? (4)
