

P-301[IMMUNOLOGY]

1. Answer the following questions.

[1 mark]

1. An antigen is

- a) A highly specific protein produced by the body in response to a foreign body
- b) A chemical that inhibits the growth of micro organisms
- c) An antibody produced by the body that stimulates the production of antibodies by the body's immune system
- d) A chemical substance that stimulates the production of antibodies by the body's immune system

2. CD40 ligand is seen only on

- a) Macrophages
- b) Cytotoxic T cells
- c) Helper T cells
- d) Dendritic cells

3. High titres of antinuclear antibodies are indicative of

- a) Parasitic infections
- b) Fungal diseases
- c) Autoimmune diseases
- d) Bacterial diseases

4. Which of the following is an auto immune disease?

- a) Type 1 Diabetes mellitus
- b) Type 2 Diabetes mellitus
- c) Haemophilia A
- d) Sickle cell anemia

5. DNA vaccines elicit protective immunity against a microbial pathogen by activating:

- a) Humoral immune system
- b) Cellular immune system
- c) Both a) and b)
- d) None of these

6. Which is the first immunoglobulin class to be produced in a primary response to an antigen and also the first immunoglobulin to be synthesised by the neonates:

- a) IgA b) IgB c) IgD d) IgM

7. In an immune response the type of cell which gets activated earliest is :

- a) Killer T cells
- b) Plasma cells

- c) Helper T cells
- d) Cytotoxic T cells

8. What is a characteristic of early stages of local inflammation?

- a) Fever
- b) Anaphylactic Shock
- c) Release of histamine
- d) Attack by cytotoxic T cells

9. An epitope associates with which part of an antibody?

- a) The antibody binding site
- b) The heavy chain constant regions only
- c) Variable regions of a heavy chain and light chain combined
- d) The light chain constant regions only

10. Which of the following is not true about helper T cells?

- a) They function in cell mediated and humoral responses
- b) They are activated by polysaccharide fragments
- c) They bear surface CD4 molecules
- d) They are subject to infection by HIV

Answers

1. d) A chemical substance that stimulates the production of antibodies by the body's immune system
2. c) Helper T cells
3. c) Autoimmune diseases
4. a) Type 1 Diabetes mellitus
5. c) Both a) and b)
6. d) IgM
7. c) Helper T cells
8. c) Release of histamine
9. c) Variable regions of a heavy chain and light chain combined
10. b) They are activated by polysaccharide fragments

2. Answer the following questions within 2-3 sentences.

[1.5 mark]

1. What is immunity?
2. State different types of cell involved in cell mediated immunity.
3. What is autoimmunity ?
4. What is immunologic tolerance ?
5. What is an antigen?

6. What do you mean by antigenicity ?
7. Draw a labelled diagram of an antigen molecule .
8. What do you mean by antigen presentation ?\
9. What is cytokine ?
10. State different attributes of cytokines .
11. Mention immunological aspects of transplantation.
12. What is an antibody ?
13. What do you mean by antigen-antibody interactions?
14. What is monoclonal antibodies?
15. What is HLA system?

3. Answer the following questions within 75-100 words.

[2 marks]

1. Distinguish between innate and adaptive immunity .
2. Distinguish between passive and active immunity.
3. Distinguish between humoral and cell mediated immunity.
4. Mention cells and molecules involved in innate immunity.
5. Mention cells and molecules involved in adaptive immunity.
6. What do you mean by autoimmunity?
7. What is immunedysfunction ?
8. What is immunogenicity .
9. What is B and T cell epitopes ?
10. State function of antibody molecule.
11. What is antigen –antibody interactions ?
12. What is MHC ? State its types .
13. What do you mean by Antigen Processing and Presentation ?
14. What do you mean by cytotoxicity? State its types.
15. What do you mean by compliment system ?
16. Elaborate role of cytokines in immune system.
17. Define toll like receptors .
18. What is hypersensitivity ?Mention its different types.
19. What is vaccine ?

4. Answer the following questions within 500 words.

[6marks]

1. Give the physiology of immune system.
2. What is innate and adaptive immunity ?
3. What is humoral and cell mediated immunity.
4. How are B and T lymphocytes activated and regulated ?
5. Give the cells and molecules involved in innate and adaptive immunity.
6. Give an account on immunologic tolerance and autoimmunity.
7. What do you understand by immune dysfunction ?

8. What are antigens ? Differentiate between antigenicity and immunogenicity.
9. Discuss about B and T lymphocytes.
10. Give the structure and function of antibody molecule.
11. Explain about generation of antibody diversity.
12. How are monoclonal antibodies generated ?
13. What is antibody engineering ?
14. State about antigen –antibody interactions.
15. Give an account on MHC and HLA system.
16. Explain about antigen processing and presentation.
17. What do you mean by cell mediated cytotoxicity and antibody dependent cell mediated cytotoxicity ?
18. Elaborate the different pathway of complement system.
19. What are cytokines ? Give their types and role in immune regulation.
20. What are toll like receptors ?
21. Give the immunological aspects of transplantation.
22. Give a brief account on inflammation.
23. Describe hypersensitivity.
24. State about immune response during autoimmunity (rheumatoid arthritis)
25. State about congenital and acquired immunodeficiencies.
26. Write a short note on vaccine.