KAMARAJ COLLEGE (Autonomous)

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(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

(4 Pages) **Reg. No:……**

Question Code: 26E01306 **Course Code: 24PMZO41**

PG Degree - End Semester Examinations, April 2026

Fourth Semester

M.Sc., ZOOLOGY

Immunology

(For those who joined in July 2024 onwards)

Time: 3Hours **Maximum: 75 Marks**

PART – A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer:

CO:1 K:1 1. Which one of the following mediates cellular immunity?

(a) B-lymphocytes (b) Antibodies

(c) T-lymphocytes (d) Plasma proteins

CO:2 K:1 2. Which one of the following is a physical barrier of innate immunity?

(a) Lysosome (b) Antibodies

(c) Skin (d) Interferons

CO:1 K:1 3. Define antigen as a substance.

(a) Produces antibody only

(b) Induces an immune response and reacts specifically with antibodies

(c) Causes disease

(d) Destroys pathogens

CO:2 K:1 4. Recall the main function of complement system _____

(a) Antibody synthesis (b) Cell lysis and inflammation

(c) Memory formation (d) Antigen presentation

CO:2 K:2 5. Differentiation of activated B cells results in _____

(a) T cells only (b) Macrophages

(c) Natural killer cells (d) Plasma cells and memory B cells

CO:2 K:1 6. Which immunoglobulin is the first antibody produced in primary immune response?

(a) IgM (b) IgG

(c) IgA (d) IgA

CO:1 K:2 7. Choose the primary function of interferon _____

(a) Stimulate antibody production (b) Activate complement system

(c) Neutralize toxins (d) Inhibit viral replication

CO:2 K:1 8. Choose the main function of cytokines _____

(a) Destroy pathogens directly (b) Neutralize toxins

(c) Regulate and coordinate immune responses (d) Produce antibodies

CO:1 K:2 9. Antigen is presented to T cells in association with _____

(a) Immunoglobulins (b) Complement proteins

(c) Cytokines (d) MHC molecules

CO:2 K:1 10. Which one of the following is getting depleted by HIV?

(a) B-lymphocytes (b) CD 8^+ T cells

(c) CD 4^+ T helper cells (d) NK cells

PART – B (5 X 5 = 25 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 250 words.

CO:3 K:4 11. (a) Examine the role of primary and secondary lymphoid organs with suitable examples.

(OR)

(b) Classify the components of the innate immune system and describe their role in first-line defense.

CO:2 K:3 12. (a) Organize the different types of vaccines and their role in disease prevention.

(OR)

(b) Identify the antigens based on their origin and give examples.

CO:3 K:4 13. (a) Categorize the types and morphology of lymphocytes.

(OR)

(b) Examine briefly the process of B-cell activation and differentiation.

CO:3 K:4 14. (a) Inspect the mechanism of antigen-antibody interactions.

(OR)

(b) Differentiate the types of interferons based on their cellular origin.

CO:3 K:4 15. (a) Describe the autoimmune diseases and illustrate the major immune responses.

(OR)

(b) Analyze the interaction between *Mycobacterium tuberculosis* and the host immune system.

PART – C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).
Answer should not exceed 600 words.

CO:2 K:5 16. (a) Interpret the mechanism of cell-mediated immunity.

(OR)

(b) Explain the types of immunity and examine their specific role in host defense mechanism.

CO:3 K:4 17. (a) Discover the three major activation pathways of the complement system and illustrate their role in host defense.

(OR)

(b) Inspect the types of antigenicity and immunogenicity and explain their significance in immune response.

CO:4 K:5 18. (a) Interpret the structure and classes of major histocompatibility complex molecules.

(OR)

(b) Defend the process of T cell maturation in the thymus.

CO:5 K:6 19. (a) Discuss the structural and functional characteristics of any 3 classes of immunoglobulins with suitable diagrams.

(OR)

(b) Elaborate the steps involved in the production of monoclonal antibodies by hybridoma technology.

CO:5 K:6 20. (a) Predict the four types of hypersensitivity reactions and explain their underlying mechanisms and clinical manifestations.

(OR)

(b) Invent the different types of immunodeficiency diseases and explain their causes and clinical features.