

KAMARAJ COLLEGE (Autonomous)

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(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

(3 Pages)

Reg. No:.....

Question Code: 26E01605

Course Code: 24PMMB31

PG Degree - End Semester Examinations, April 2026

Third Semester
M.Sc., MICROBIOLOGY

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 1. Which cells are primarily responsible for cell-mediated immunity?
K:1 (a) B lymphocytes (b) T lymphocytes
(c) Neutrophils (d) Erythrocytes
- CO:1 2. Active immunity is best described as:
K:2 (a) Antibody transfer from mother (b) Immunity produced after infection
(c) Injection of antisera (d) None of the above
- CO:2 3. Which immunoglobulin is the first antibody produced during primary response?
K:1 (a) IgG (b) IgM
(c) IgA (d) IgE
- CO:2 4. The classical complement pathway is activated by:
K:2 (a) Antigen-antibody complex (b) Lipopolysaccharide
(c) Properdin (d) Interferon
- CO:3 5. Type I hypersensitivity is mediated by:
K:1 (a) IgG (b) IgM
(c) IgE (d) IgD
- CO:3 6. An example of autoimmune disease is:
K:2 (a) Tuberculosis (b) Diabetes mellitus type I
(c) Malaria (d) Typhoid

- CO:4 7. SRID is mainly used for:
K:1 (a) Antigen quantification (b) DNA sequencing
(c) Cell culture (d) Protein synthesis
- CO:4 8. ELISA is an example of:
K:2 (a) Labeled immunoassay (b) Precipitation test
(c) Agglutination test (d) Chromatography
- CO:5 9. HLA system is associated with:
K:1 (a) Complement proteins (b) Major histocompatibility complex
(c) Immunoglobulins (d) Cytokines
- CO:5 10. Immunological tolerance refers to:
K:2 (a) Enhanced immune response (b) Failure to respond to antigen
(c) Antibody overproduction (d) Complement activation

PART - B (5 X 5 = 25 Marks)

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

Answer should not exceed 250 words.

- CO:1 11. (a) Illustrate the origin and differentiation of T and B
K:3 lymphocytes.

(OR)

- (b) Differentiate innate and acquired immunity with suitable examples.

- CO:2 12. (a) Classify and interpret the functions of immunoglobulins.

K:3

(OR)

- (b) Illustrate the classical and alternative complement pathways.

- CO:3 13. (a) Analyze the mechanism of Type I hypersensitivity reaction.

K:4

(OR)

- (b) Interpret the development of autoimmune diseases.

- CO:4 14. (a) Analyze the principles of FISH and its diagnostic applications.

K:4

(OR)

- (b) Differentiate immunodiffusion techniques-SRID and ODD based on their principles and uses.

CO:5 15. (a) Analyze the structure and functions of MHC molecules.

K:3

(OR)

(b) Examine the principles underlying in HLA system.

PART - C (5 X 8 = 40 Marks)

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

Answer should not exceed 600 words.

CO:1 16. (a) Analyze antigen processing and presentation to T lymphocytes.

K:4

(OR)

(b) Interpret the roles of cells and organs of the immune system.

CO:2 17. (a) Examine antibody diversity and class switching mechanisms.

K:4

(OR)

(b) Interpret monoclonal antibody production and its applications.

CO:3 18. (a) Evaluate the different types of hypersensitivity reactions.

K:5

(OR)

(b) Assess primary and secondary immunodeficiencies.

CO:4 19. (a) Critically evaluate different immunological diagnostic techniques.

K:5

(OR)

(b) Appraise ELISA-based detection of viral antigens.

CO:5 20. (a) Appraise tumor immunology and immune surveillance mechanisms.

K:5

(OR)

(b) Justify immunosuppression and immunological tolerance in transplantation.