(6 pages) **Reg. No. :** .....

Code No. : 10554 E **Sub. Code : CMMI 31**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2024.

Third Semester

Microbiology — Core

FUNDAMENTALS OF IMMUNOLOGY

(For those who joined in July 2021-2022 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Who invented the chicken cholera vaccine?
   (a) Edward Jenner
   (b) Louis Pasteur
   (c) Emil von Behring
   (d) Cesar Milstein

2. Name the first cell to respond to an infection is
   (a) Neutrophils (b) NK cell
   (c) Basophile (d) Macrophage

3. The ability of one cytokine to exhibit diverse functionalisties in different target cell is known as
   (a) Pleiotropy (b) Synergy
   (c) Antagonism (d) Redundancy

4. The projections in the capsule of the spleen are called as
   (a) Mucosal lining (b) Epithelium
   (c) Trabeculae (d) Cuticle

5. The membrane attack complex in the complement pathway consists of
   (a) C3b3bBb (b) C5b6789
   (c) C4b2b (d) C3b2b3b

6. Which of the following amino acid is found in the hinge region?
   (a) Alanine and Aspartate
   (b) Asparagine and Aspartate
   (c) Proline and Cysteine
   (d) Phenylalanine and Valine

7. Identify the enzyme used in ELISA technique.

(a) Esterase

(b) Methyltransferase

(c) Lactate dehydrogenase

(d) Horseradish peroxidase

8. Mantoux skin test is used to detect

(a) HIV (b) HSV

(c) HBV (d) TB

9. Which of the following is the type of cell largely responsible for type I hypersensitivity responses?

(a) Erythrocyte

(b) Mast cell

(c) T-lymphocyte

(d) NK cell

10. In tumour immunology, altered self-antigens are recognized by cancer-specific

(a) NK cells

(b) CD4 specific T-cells

(c) CD8 specific T-cells

(d) Regulatory T-cells

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss the contribution of Cesar Milstein and Georges Kohler in immunology.

Or

(b) Define acquired immunity. Explain its types.

12. (a) What are the components of bone marrow?

Or

(b) Discuss the structure and function of lymph node.

13. (a) Define antigen Give a note on its types.

Or

(b) Describe toxoid and antitoxin with an example.

14. (a) Elaborate the agglutination reaction and its types.

Or

(b) Determine the principle and applications of CFT.

15. (a) Elaborate type I hypersensitivity with example.

Or

(b) Summarize the mechanism of MHC I antigen presentation.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the hemolytic transfusion mechanism.

Or

(b) Organize the structure and composition of cells in immune system.

17. (a) Describe the structure and types of cytokines.

Or

(b) Elaborate on humoral immune response.

18. (a) Illustrate about classical pathway of complement system.

Or

(b) Describe the structure and functions of immunoglobulin M (IgM).

19. (a) Write the principle types and applications of ELISA.

Or

(b) Define hybridoma technology. Write its importance and applications

20. (a) Interpret type IV hypersensitivity reactions.

Or

(b) Discuss the acceptance and rejection of graft in transplantation.

———————