QP Code: P25C029

Reg. No : ....
Name : ....

ST MARY'S COLLEGE (AUTONOMOUS), THRISSUR-20

III SEMESTER (CBCSS - PG) DEGREE EXAMINATIONS, OCTOBER 2025
M. Sc. Biotechnology
GBT3C04 : IMMUNOLOGY
2024 Admission Onwards

Time: 3 Hours **Maximum Weightage:30**

Part A

*Short answer type questions. Answer **any four**. Weightage **2** for each.*
(4x2 = 8 Weightage)

1. Describe hematopoietic growth factors.
2. List protozoan immune evasion strategies.
3. Analyze the difference between affinity and avidity by explaining how each influences the effectiveness of antibody-antigen binding in immune responses.
4. Analyze the similarities and differences in cytokine profiles during the acute phase of bacterial septic shock and chronic phase of Chagas disease.
5. Explain how antigen-presenting cells (APCs) use MHC class II to activate T-helper cells during infection.
6. Evaluate the effectiveness of current immunosuppressive protocols in organ transplantation. What improvements could be made?
7. Examine how different adjuvants enhance immunogenicity and analyze their significance in modern vaccine development.

Part B

*Short essay-type questions. Answer **any four**. Weightage **3** for each.*
(4x3 = 12 Weightage)

8. Evaluate the role of monoclonal antibodies in therapeutic applications.
9. Compare the structural and functional differences between the thymus and spleen.
10. A patient presents with joint pain, fatigue, and elevated anti-nuclear antibodies. Apply your knowledge to suggest a likely autoimmune diagnosis and explain the immunological basis.
11. How active immunity can be acquired naturally and artificially. Illustrate with examples.

Turn Over

12. Describe how the immune system detects and eliminates tumor cells.
13. List the mechanisms by which activated macrophages kill pathogens or infected cells.
14. List the common signs and symptoms associated with lymphoid and myeloid malignancies.

Part C

*Essay-type questions.Answer **any two**. Weightage **5** for each.*
(2x5 = 10 Weightage)

15. Describe the difference between the effector functions of T lymphocytes and antibodies.
16. Compare and contrast the advantages and limitations of whole organism vaccines vs. DNA and synthetic peptide vaccines.
17. Analyze the interactions between different immune cells during an immune response and explain how each contributes to immune regulation.
18. Describe hypersensitivity with examples.

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