

M. Sc. DEGREE END SEMESTER EXAMINATION - OCTOBER 2024**SEMESTER 3 : ZOOLOGY****COURSE : 21P3ZOOT12 : IMMUNOLOGY***(For Regular 2023 Admission and Supplementary 2022/2021 Admissions)*

Duration : Three Hours

Max. Weights: 30

PART A**Answer any 8 questions****Weight: 1**

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| 1. | Points out difference between peptide binding by Class I and Class II MHC molecules. | (A, CO 7, CO 8) |
| 2. | What is opsonisation? | (R) |
| 3. | Define somatic hypermutation. | (R) |
| 4. | Brief on humoral response. | (R, CO 2, CO 3) |
| 5. | What is haemolytic disease of the newborn? | (U) |
| 6. | What is Immune electron microscopy? | (U, CO 8) |
| 7. | Note on autoimmunity. | (U, CO 7) |
| 8. | What are the main functions of cytokines? | (R, CO 4) |
| 9. | Brief on lectin pathway of complement activation. | (U, CO 7) |
| 10. | What is membrane attack complex? | (An) |
| | | (1 x 8 = 8) |

PART B**Answer any 6 questions****Weights: 2**

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|-----|--|---------------------|
| 11. | How do immune response to extracellular and intracellular bacteria differ? | (U, CO 7) |
| 12. | Prepare an account of antibody dependent pathway of complement activation. | (An, CO 7) |
| 13. | Role of neutrophils and lymphocytes in inflammatory response. | (U, CO 4) |
| 14. | Explain HLA typing interaction. | (U, CO 7, CO 8) |
| 15. | What are the effector functions mediated by antibody? | (R) |
| 16. | Give an account of Flow cytometry and fluorescence. | (U, CO 8) |
| 17. | Discuss the role of IgE in type 1 hypersensitivity. | (An, CO 8) |
| 18. | Describe the structure and functions of major antibodies in humans. | (U) |
| | | (2 x 6 = 12) |

PART C**Answer any 2 questions****Weights: 5**

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| 19. | Elaborate the types of cells involved in an immune reaction. Add note on its production and maturation. | (U, CO 1, CO 2) |
| 20. | The three complement activation pathways converge to generate MAC and bring about complement effector functions. Justify the statement.. | (A, CO 8) |
| 21. | Explain the two antigen processing and presentation pathways? | (U, CO 3, CO 5) |
| 22. | Classify the different chemokines. | (A, CO 4) |
| | | (5 x 2 = 10) |

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Explain the overview of immune system	U	19	5
CO 2	Outline antigens and antibodies and their interactions	U	4, 19	6
CO 3	Explain the complement system	U	4, 21	6
CO 4	Classify and interpret the Immune effector mechanisms	U	8, 13, 22	8
CO 5	Explain about allergy and hypersensitivity	U	21	5
CO 7	Explain the mechanism of immune reactions behind health problems and diseases	U	1, 7, 9, 11, 12, 14	9
CO 8	Explain and interpret the basics of immunological techniques	U	1, 6, 14, 16, 17, 20	13

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;