

POST-GRADUATE DEGREE PROGRAMME

Term End Examination — December, 2024

ZOOLOGY

Paper-6B : IMMUNOLOGY AND MICROBIOLOGY

Time : 2 hours]

[Full Marks : 50

Weightage of Marks : 80%

Special credit will be given for accuracy and relevance in the answer. Marks will be deducted for incorrect spelling, untidy work and illegible handwriting. The weightage for each question has been indicated in the margin.

1. Answer *two* questions : 9 × 2 = 18
 - a) Distinguish between innate and specific (adaptive) immunity. What are null cells ? What are anatomic and physiologic barriers ? 4 + 2 + 3
 - b) State the role of antigen presenting cells (APCs). Mention the role of NK cells in immunity. Who are the lymphoid lineage cells ? Give examples. 3 + 3 + 3
 - c) Describe the role of spleen and lymph nodes in immunity. What are adjuvants ? Mention common adjuvants and their mode of action. 3 + 2 + 4
 - d) Briefly state the process of inflammation. What is the role of macrophage and PMN in this process. 6 + 3
2. Answer *three* questions : 6 × 3 = 18
 - a) Difference between *B* cell and *T* cell. Mention two components of classical complement pathway. 4 + 2
 - b) Describe the major functions of complement. What is MAC (Membrane Attacking Complex) ? 4 + 2
 - c) State how immune system works against helminth parasites.
 - d) State the structures and functions of MHC class I and MHC class II molecules. 3 + 3
 - e) Mention the components of humoral immune system. State the functions of them. 3 + 3
 - f) State the structures and functions of bone marrow and thymus in relation to immunity. 2 + 2 + 2

3. Answer *two* questions : 4 × 2 = 8
- a) Mention two recombination activating genes. What is ITAM ? 2 + 2
 - b) What is type I IgE mediate hypersensitivity ? Mention two components of type I hypersensitivity reaction ? 2 + 2
 - c) Describe allergic eczema and atopy. 2 + 2
 - d) What is ADCC ? What is phagocytosis ? 2 + 2
4. Answer *two* questions : 3 × 2 = 6
- a) What is epidemiology ? Mention three main factors involved in the infectious process. 1 + 2
 - b) State the role of cytokines during inflammation. 3
 - c) Graphically represent three patterns of outbreak of infection. 1 + 1 + 1
 - d) What is mast cell ? Mention the cytokines secreted by mast cell. 1 + 2
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