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**MZO-008**

**MASTER OF SCIENCE (ZOOLOGY)**

**(MSCZOO)**

**Term-End Examination**

**December, 2025**

**MZO-008 : IMMUNOLOGY**

*Time : 2 Hours*

*Maximum Marks : 50*

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**Note :** (i) Attempt any **five** questions.

(ii) All questions carry equal marks.

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1. (a) Explain how B-cells differentiate into plasma and memory cells. Discuss their respective functions. 5

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- (b) Discuss the structure of class I MHC molecule, including the role of B<sub>2</sub> microglobulin. 5

2. Differentiate between the following pairs of terms : 4×2.5=10

(a) Primary and Secondary lymphoid organs

(b) Plasma cells and Memory B-cells

(c) Type-I and Type-II hypersensitivity reactions

(d) Active Immunisation and Passive Immunisation

3. Write short notes on the following : 4×2.5=10

(a) Hematopoietic Stem Cells (HSCs)

- (b) Ouchterlony Double Diffusion
  - (c) Opsonisation in complement system
  - (d) Hybridoma technology
4. (a) Provide an overview of the *five* main antibody classes. 5
- (b) Explain how positive and negative selections operate in the thymus. 5
5. (a) Define hypersensitivity and explain its significance in the immune system. 5
- (b) Discuss the significance of donor-recipient matching in transplantation. 5
6. (a) Describe the concept of chimeric antibodies. 5

(b) Describe the autocrine, paracrine and endocrine functions of cytokines. 5

7. Describe the Mancini Immunodiffusion technique and formation of the precipitin ring. Illustrate with a suitable diagram. 10

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