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MZO-008

MASTER OF SCIENCE (ZOOLOGY)

(MSCZOO)

Term-End Examination

June, 2026

MZO-008 : IMMUNOLOGY

Time : 2 Hours

Maximum Marks : 50

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

(ii) All questions carry equal marks.

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1. (a) Describe the structure and function of
the bone marrow in haematopoiesis. 5
 - (b) Explain the features of MHC class-I and
class-II molecules and their significance
in antigen presentation. 5

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

- (a) B cells and T cells
- (b) Endogenous antigens and Exogenous antigens
- (c) Type-I and Type-II hypersensitivity
- (d) Attenuated vaccine and killed vaccines

3. Write short notes on the following :

4×2.5=10

- (a) Haptens
- (b) Cytokines
- (c) Tuberculin hypersensitivity
- (d) Anaphylaxis

4. (a) Explain how positive and negative selections operate in the thymus. 5
- (b) Explain how C_3 convertase is formed in the classical pathway. Describe its role in amplifying the immune response. 5

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5. (a) Discuss the characteristics of Primary Immuno Deficiencies (PID). 5
- (b) Explain Edward Jenner's contribution to vaccine development. 5
6. (a) Describe the process of antibody production by B cells. 5
- (b) Explain how the immune system differentiates between tolerance and activation. 5
7. Explain how Enzyme-Linked Immunosorbent Assay (ELISA) works. Distinguish between direct and indirect ELISA techniques. 10

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