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MZOE-005

M. SC. (ZOOLOGY) (MSCZOO)

Term-End Examination

June, 2026

**MZOE-005 : INSECT PHYSIOLOGY AND
TOXICOLOGY**

Time : 2 Hours

Maximum Marks : 50

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

(ii) All questions carry equal marks.

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1. (a) Define Metamorphosis. Write the differences between hemimetabolous and holometabolous metamorphosis with examples. 5

- (b) Explain the structure and functions of Malpighian tubules in the excretory system of insects. 5
2. Describe the circulatory system in insects. Highlight the role of haemolymph in immunity and thermoregulation. 10
3. Give an account of the endocrine glands in insects and their role in regulating moulting and metamorphosis. 10
4. (a) Describe the female reproductive system in insects. 5
- (b) Explain the structure and role of the tracheal system in gaseous exchange in terrestrial insects. 5

5. Write short notes on any *two* of the following : 2×5=10

(a) Organochlorine (OC) pesticides

(b) Organophosphate (OP) pesticides

(c) Carbonate insecticides

6. (a) Explain the terms LD₅₀, LC₅₀ and LT₅₀ and write their significance. 5

(b) What are Insect Growth Regulators (IGRs) ? Discuss any *two* types. 5

7. Give an account of any *two* of the following : 10

(a) Neonicotinoids

(b) Rotenoids

(c) Fumigants

8. (a) What are synthetic pyrethroids ? Write the properties of permethrin or deltamethrin. 5
- (b) Describe the process of pesticide registration in India. 5

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