

No. of Printed Pages : 4

**MZOE-005**

**M. SC. (ZOOLOGY)**

**(MSCZOO)**

**Term-End Examination**

**December, 2025**

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

*Time : 2 Hours*

*Maximum Marks : 50*

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***Note :** Attempt any **five** questions. The marks for each question are indicated against it.*

1. What are organophosphate compounds ?  
Describe their characteristic features and uses. Why are these considered harmful to the environment ? 10
  
2. Name the hormones controlling moulting and metamorphosis in insects. Describe the hormonal control of moulting and metamorphosis in detail. 10
  
3. Define the following terms : 5×2=10
  - (a) Paedogenesis
  
  - (b) Antifeedant
  
  - (c) Biopesticide
  
  - (d) Polyembryony
  
  - (e) Antidote

4. Explain the different indices of acute toxicity i.e.,  $LD_{50}$ ,  $LC_{50}$  and  $LT_{50}$ . Discuss the significance of these values. 10
5. (a) Explain the structure and function of Malpighian tubules in insect. 5
- (b) Discuss the functions of haemolymph. 5
6. (a) Explain the impulse transmission process in insects. 5
- (b) Compare the process of osmoregulation in terrestrial and aquatic insects. 5
7. (a) Describe the source, active ingredient and uses of neem oil as a safe pesticide. 5
- (b) Discuss various respiratory methods employed by aquatic insects. 5

8. (a) Explain how do Insect Growth Regulators (IGRs) function as insecticides. 5
- (b) Explain the mechanism of circulation in insects. 5

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