MZOE-005

ASSIGNMENT BOOKLET

M.Sc. (Zoology) Programme

(MSCZOO)

(INSECT PHYSIOLOGY AND TOXICOLOGY)

Valid from 1st January, 2026 to 31st December, 2026

School of Sciences
Indira Gandhi National Open University
Maidan Garhi, New Delhi-110068

(2026)

Dear Student,

Please read the Section on assignments in the Programme Guide for M.Sc. (Zoology). A weightage of 30 per cent, as you are aware, has been earmarked for continuous evaluation, which would consist of one tutor-marked assignment for this course. The assignment is in this booklet. The total marks for this assignment is 100, of which 40 marks are needed to pass it.

Instructions for formatting your Assignments

Before attempting the assignment please read the following instructions carefully:

1) On top of the first page of your answer sheet, please write the details exactly in the following format:

ROLL NO.: ……

NAME: ……..

ADDRESS: ……

……

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COURSE CODE: …….

COURSE TITLE: …….

ASSIGNMENT NO.: ……..….

STUDY CENTRE: ……..…..... **DATE:** ……..…….

PLEASE FOLLOW THE ABOVE FORMAT STRICTLY TO FACILITATE EVALUATION AND TO AVOID DELAY.

2) Use only foolscap size writing paper (but not of very thin variety) for writing your answers.

3) Leave 4 cm margin on the left, top and bottom of your answer sheet.

4) Your answers should be precise.

5) Solve this assignment, and **submit the complete assignment answer sheets within the due date.**

6) The assignment answer sheets are to be submitted to your Study Centre within the due date. **Answer sheets received after the due date shall not be accepted. We strongly suggest that you retain a copy of your answer sheets.**

7) **This assignment is valid from 1st January, 2026 to 31st December, 2026.** If you have failed in this assignment or fail to submit it till its validity, then you need to get the assignment for the next year and submit it as per the instructions given in the Programme Guide.

8) **You cannot fill the examination form for this course** until you have submitted this assignment.

We wish you good luck.

ASSIGNMENT
(Tutor Marked Assignment)

Course Code: MZOE-005
Assignment Code: MZOE-005/TMA/2026
Maximum Marks: 100

Note: Attempt all questions. The marks for each question are indicated against it.

1. Name the hormones controlling moulting and metamorphosis in insects. Describe the hormonal control of moulting and metamorphosis in detail. (10)

2. a). Give an account of the organs present in the foregut regions of insect digestive system. (5)

   b). Compare the process of osmoregulation in terrestrial insects. (5)

3. a) Explain mechanism of circulation in insects. (5)

   b) Explain the physiology of gaseous exchange in terrestrial and aquatic insects. (5)

4. Explain the processes of oogenesis and spermatogenesis in insects. (10)

5. a). Describe the bioluminescence in insects and discuss its significance. (5)

   b). Explain the physiology of nerve cells in insects. (5)

6. a). Why it is important to evaluate LD50 and LC50 while assessing the toxicity of pesticides? (5)

   b). Discuss the differences between the mechanism of action of organophosphates and carbamates. (5)

7. How are rotenoids different from the neonicotinoids in their source, mode of action and toxicity? (10)

8. a). Describe the source, active ingredient and uses of neem oil as a safe pesticide. (5)

   b). Describe the environmental and health implications of persistent organic pollutants (POPs) such as DDT. (5)

9. Define the following terms: (10)

   a). Biopesticide

   b). Nanopesticide

   c). Antifeedant

   d). Entomopathogenic fungi

   e). Antidote

10. Name the three processes of dealkylation in microsomal metabolism of pesticides. Explain each with the help of examples. (10)