MZO-003

ASSIGNMENT BOOKLET

M.Sc. (Zoology) Programme

(MSCZOO)

Comparative Animal Physiology and Biochemistry

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: ……

……

……

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

Course Code: MZO-003
Assignment Code: MZO-003/TMA/2026
Maximum Marks: 100

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

1. a) Explain with help of a diagram fluid exchange across the capillary wall. (5)

   b) Explain RAAS (Renin Angiotensin Aldosterone System). (5)

2. Differentiate between any three of the following pairs of terms: (2 ½× 4= 10)

   i) Hypoxia and Hypercapnia

   ii) Acclimatization and Acclimation

   iii) Concerted (MWC) model and Sequential (KNF) model of allosteric enzyme

   iv) Phase I and Phase II of glucose homeostasis

3. a) Describe the function of electric organs in fish. (5)

   b) Explain how absorption of fats differs from absorption of proteins and sugars. (5)

4. Write short notes of the following: (10)

   i) Cardic output

   ii) Membrane potential

   iii) Concept of activation energy

   iv) Role of respiratory complex II in electron transport chain

5. a) Describe the various methods of regulating enzyme activity. (5)

   b) Derive the Michaelis-Menten equation for enzyme catalysed reactions. (5)

6. a) Briefly describe how glucose homeostasis is maintained in humans. (5)

   b) How does enzyme lower the activation energy? Discuss using suitable examples. (5)

7. a) Explain how are enzyme inhibitors used as therapeutic drugs. (5)

   b) Discuss the evolution of electrosensory system and electric organs. (5)

8. a) Discuss the regulation of activity of the enzyme fatty acid synthase. (5)

   b) Discuss the Lineweaver-Burk plot of enzyme kinetics and diagram. (5)

9. a) Discuss the role of the Na+/K+ATPase pump in osmoregulation. (5)

   b) What are the five major respiratory conditions? (5)

10. a) What is the significance of bile juice in the process of digestion? (5)

    b) Why are villi present in the small intestine and not in the stomach? (5)