MZO-001

ASSIGNMENT BOOKLET

M.Sc. (Zoology) Programme

(MSCZOO)

Cell and Molecular Biology

Valid from 1st January, 2025 to 31st December, 2025

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

(2025)

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, 2025 to 31st December, 2025. 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-001
Assignment Code: MZO-001/TMA/2025
Maximum Marks: 100

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

1. a) Write a brief note on the origins of the chloroplast and mitochondria. (5)
   b) Describe the biological significance of the cytoskeleton. (5)
2. a) Briefly discuss the structure of intermediate filaments. (5)
   b) How is the MAPK pathway activated? Explain. (5)
3. Write difference between following pairs: (10)
   i) Centrosomes and Centrioles
   ii) Intrinsic and extrinsic apoptotic pathways
   iii) Cilia and flagella
   iv) Actin and myosin
4. Write a short note on the following: (10)
   i) Plasma membrane
   ii) Necrosis
   iii) Cryopreservation of cell line
   iv) Facilitated Diffusion
5. a) Briefly discuss the process of transduction in the cell signaling. (5)
   b) Discuss the different types of cell junctions. (5)
6. a) Describe the role of ubiquitin in protein turnover (5)
   b) Discuss different phases of Interphase with suitable diagram. (5)
7. a) Enlist the culture media used in the cell culture. (5)
   b) Explain what are the checkpoints and its regulation? (5)
8. a) Define active transport? Discuss with suitable examples. (5)
   b) Explain the vesicular transportation mechanism in details. (5)
9. a) Describe the role of G-protein coupled receptors (GPCRs) in signal transduction of cells. (5)
   b) What are the main glands found in the brain and how do they function. (5)
10. a) Define Cyclin-CDK kinases. Write a brief note about the interaction between cyclin and CDKs. (5)
    b) Explain how cellular pH maintained and regulated. (5)