

**MZO-001**

**ASSIGNMENT BOOKLET**

**M.Sc. (Zoology) Programme**

**(MSCZOO)**

**Cell and Molecular Biology**

**Valid from 1<sup>st</sup> January, 2024 to 31<sup>st</sup> December, 2024**



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

**(2024)**

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:

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**ROLL NO.:** .....

**NAME:** .....

**ADDRESS:** .....

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**COURSE CODE:** .....

**COURSE TITLE:** .....

**ASSIGNMENT NO.:** .....

**STUDY CENTRE:** .....

**DATE:** .....

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**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 1<sup>st</sup> January, 2024 to 31<sup>st</sup> December, 2024. 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/2024  
Maximum Marks: 100

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

1. a) How do the origins of the chloroplast and mitochondria occur? (5)  
b) How do sclerenchyma and collenchyma differ in terms of their structure and function? (5)
2. a) How do numerous drugs influence actin polymerization? (5)  
b) Write the various events of muscle contraction in the proper order from beginning to end. (5)
3. a) Describe the structure and processes of assembly and disassembly microtubules. (5)  
b) Describe in detail the diseases arising from mutations in intermediate filament genes. (5)
4. a) Explain the structure of the plasma membrane known as the fluid mosaic. (5)  
b) Discuss active transport with a relevant diagram. (5)
5. Discuss which organelles are responsible for sorting, packaging, processing, and modifying proteins? (10)
6. a) Enumerate the major classes of neurotransmitter. (5)  
b) What are the receptors for signal transduction? (5)
7. a) Give a comprehensive explanation on the facilitated diffusion process. (5)  
b) How does the p53 tumour suppressor gene regulate the cell cycle? (5)
8. a) How BCL-2 and MCL-1 inhibitors help in cancer treatment? (5)  
b) Differentiate between intrinsic and extrinsic apoptotic pathways. (5)
9. a) What are the distinguishing features of the centriole? (5)  
b) List the common features of the signaling system. (5)
10. What is a cell cycle? Discuss different phases and regulatory mechanisms involved in the cell cycle. (10)