

MZO-005

ASSIGNMENT BOOKLET

M.Sc. (Zoology) Programme

(MSCZOO)

GENOMICS AND PROTEOMICS

Valid from 1st January, 2024 to 31st 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:

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, 2024 to 31st 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 PARASITOLOGY

Course Code: MZO-005
Assignment Code: MZO-005/TMA/2024
Maximum Marks: 100

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

1. What are introns and exons? Discuss the evolution of proteins by exon shuffling with illustrations. (4+6=10)
2. Discuss with diagrams the different types of repeat elements present in eukaryotic genomes. (10)
3. What is genome sequencing? Give an overview of the two broad types of genome sequencing you have studied. (3+7=10)
4. Write short notes: (10)
 - a) Multiple sequence alignment
 - b) cDNA-AFLP
5. Outline the basic principles of Northern blotting and GeneCalling. (6+4=10)
6. What is peptide sequencing? Discuss with schematic representation, Edman degradation method of peptide sequencing. Mention its advantages and disadvantages. (2+5+3=10)
7. Elaborate the different methods used for ionization of proteins during mass spectrometry. (10)
8. Write an account on the Human Genome Project, with special reference to the analysis, recent advances and importance in medical sciences. (10)
9. What is meant by gene silencing? Discuss the components of gene silencing. Write an account of homology-dependent gene silencing. (2+4+4=10)
10. Describe with proper diagrams, the technique of Stable Isotope Labeling by Amino Acids in Cell Culture (SILAC) and its applications. (10)