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MZO-005

M. SC. (ZOOLOGY)

(MSCZOO)

Term-End Examination

June, 2025

MZO-005 : GENOMICS AND PROTEOMICS

Time : 2 Hours

Maximum Marks : 50

Note : Attempt any *five* questions. All questions carry equal marks.

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1. (a) Discuss the different types of retrotransposons. 5
- (b) Discuss the evolution of vertebrate globin gene family. 5

2. Describe the sequencing based approach to transcriptome analysis along with its advantages and disadvantages. 10
3. (a) Explain the steps of 'clone by clone' method of genome sequencing with illustrations. 5
(b) Write a brief note on Multiple Sequence Alignment with special reference to its types and uses. 5
4. (a) Outline the basic principle of northern blotting with schematic diagram. 5
(b) Write a brief note on Expressed Sequence Tags (ESTs) along with its applications. 5
5. Give a broad account on the different types of protein microarrays. 10

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6. Discuss the role of different software packages for the evaluation and detection of 2-dimensional gel patterns in case of proteins. 10

7. Write short accounts on the following :

$2\frac{1}{2} \times 4 = 10$

(a) Genome analysis of *Plasmodium falciparum*

(b) Bacterial artificial chromosomes

(c) Small interfering RNA

(d) Stable Isotope Labelling by Amino acids in cell culture

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