

M. SC. (ZOOLOGY)
(MSCZOO)
Term-End Examination
December, 2025

MZO-005 : GENOMICS AND PROTEOMICS

Time : 2 Hours

Maximum Marks : 50

Note : (i) *Attempt any five questions.*

(ii) *All questions carry equal marks.*

1. (a) Write a brief note on mammalian genome. 5
- (b) Define pseudogenes and discuss their types. 5
2. (a) Enumerate the different applications of -omics to human disease. 5
- (b) What is meant by mining of proteome ? Discuss the proteome mining strategy. 5

3. (a) Outline the steps of Cycle Reversible Termination (CRT) technology. 5
- (b) Discuss the tools available for tertiary structure prediction of proteins. 5
4. (a) Outline the basic principle of suppression subtractive hybridization with schematic diagram. 5
- (b) Write a brief note on RNA-Seq Analysis with clear diagram. 5
5. Discuss with proper diagram, the technique of Edman degradation of protein sequencing. Mention the advantages and disadvantages of this technique. 10
6. Discuss the different applications and utilities of 2-dimensional gel electrophoresis of proteins. 10

[3]

7. Write a short account on the following :

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

- (a) Genome analysis of *Mycobacterium tuberculosis*
- (b) General properties of restriction enzymes
- (c) Reporter genes
- (d) Phage display technique

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