No. of Printed Pages : 4 **MZO–001**

MASTER OF SCIENCE (ZOOLOGY)

(MSCZOO)

Term-End Examination

June, 2025

MZO-001 : MOLECULAR CELL BIOLOGY

Time : 2 Hours *Maximum Marks : 50*

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

(ii) All questions carry equal marks.

1. (a) What are the factors contributing to resting membrane potential of the cell ? 5

(b) Explain the roles of E-R and Golgi complex in protein trafficking. 5

2. (a) Discuss the various disorders associated with abnormal secretion of the neurotransmitters. 5

   (b) Explain the techniques of LDH assay and TUNEL assay for measuring of cell death. 5

3. (a) Explain the various steps involved in the signal transduction through G-protein coupled receptors. 5

   (b) Discuss the different forms of lysosomes in a cell. 5

4. Write short notes on the following : $4 \times 2\frac{1}{2} = 10$

   (a) Role of actin and myosin in muscle contraction

   (b) Intermediate filament polymerization

(c) Cryopreservation of cell line

(d) Necrosis

5. Differentiate between the following pairs of terms : $4\times2\frac{1}{2}=10$

(a) Polar microtubules and Kinetochore microtubules

(b) Diplotene and Diakinesis

(c) Primary active transport and Secondary active transport

(d) Desmosomes and Hemidesmosomes

6. (a) Explain how different drugs affect the actin filament using suitable examples. 5

(b) Discuss the regulation of GTPase switch proteins in signal transduction pathway. 5

7. (a) Discuss the ubiquitin-proteasome pathway in regulating intracellular protein turnover. 5

(b) Define Cyclin-CDKs kinases. Write a brief note on the relationship between cyclin and CDKs. 5

× × × × ×