

**MASTER OF SCIENCE (ZOOLOGY)
(MSCZOO)**

Term-End Examination

June, 2025

**MZO-003 : COMPARATIVE ANIMAL
PHYSIOLOGY AND BIOCHEMISTRY**

Time : 2 Hours

Maximum Marks : 50

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

1. (a) Explain how the respiratory system maintains the acid-base balance in mammals. 5
- (b) What are the chromophores ? Discuss their practical applications. 5
2. (a) Explain gastrointestinal hormones in mammals. 5

- (b) Describe temperature regulation in homeotherms. 5
3. (a) Explain how are enzyme inhibitors used as therapeutic drugs. 5
- (b) Discuss the evolution of electrosensory system and electric organs. 5
4. Differentiate between the following pairs of terms : $2\frac{1}{2} \times 4 = 10$
- (a) Hypoxia and Hypercapnia
- (b) Acclimatization and Acclimation
- (c) Concerted (MWC) model and Sequential (KNF) model of Allosteric enzyme
- (d) Phase I and Phase II of glucose homeostasis
5. Write notes on the following : $2\frac{1}{2} \times 4 = 10$
- (a) Cardiac output
- (b) Membrane potential
- (c) Concept of activation energy
- (d) Role of respiratory complex II in electron transport chain

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6. (a) Describe the process of urine formation in mammals. 5
- (b) Explain how are nerve action potentials generated. 5
7. (a) Discuss the regulation of activity of the enzyme fatty acid synthase. 5
- (b) Discuss the Lineweaver-Burk plot of enzyme kinetics with diagram. 5

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