

No. of Printed Pages : 4

**MZO-003**

**MASTER OF SCIENCE (ZOOLOGY)**

**(MSCZOO)**

**Term-End Examination**

**December, 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) Derive the Eadie-Hofstee equation of enzyme kinetics and explain its significance. 5

- (b) Describe how oxygen is transported through the blood. 5
2. (a) What are chromatophores ? Discuss their types. 5
- (b) Explain the role of ion channels in osmoregulation in organisms. 5
3. (a) Discuss the process of emulsification and micelle formation during fat digestion. 5
- (b) Discuss the different steps of Pentose-Phosphate Pathway (PPP). 5
4. Differentiate between the following pairs of terms :  $4 \times 2.5 = 10$
- (a) A- and I-band of the myofibril

- (b) Bat echolocation and Dolphin echolocation
  - (c) Group specific inhibition and suicide inhibition of enzymes
  - (d) Redox reaction and Redox potential
5. Write short notes on the following :  $4 \times 2.5 = 10$
- (a) Gluconeogenesis
  - (b) Role of hormones in glucose homeostasis
  - (c) Application of Bioluminescence homeostasis
  - (d) Juxtaglomerular apparatus
6. (a) Discuss the significance of brain and muscle in glucose metabolism. 5
- (b) Write a note on Lactate Dehydrogenase (LDH) isozymes. Mention the clinical applications of isozymes. 5

7. (a) Describe various sources of energy that is used during muscle contractions. 5
- (b) Discuss how do extreme conditions like exercise and driving affect your cardiovascular system. 5

x x x x x