Reg No:.....
Name :.....

K25FY2345

Second Semester FYUGP Zoology Examination
APRIL 2025 (2024 Admission onwards)
KU2DSCZOO105 (FUNDAMENTALS OF ANIMAL BIOLOGY)
(DATE OF EXAM: 28-4-2025)

Time : 90 min

Maximum Marks : 50

Part A (Answer any 6 questions. Each carries 2 marks)

1. Explain how respiratory surfaces are adapted for efficient gas exchange. 2
2. Compare dense regular and dense irregular connective tissue. 2
3. What is the primary difference between endotherms and ectotherms? 2
4. How does the presence of sweat glands in mammals help with temperature regulation? 2
5. Why is camouflage important for animals in the wild, and how does it improve their chances of survival? 2
6. Explain the role of ATP in muscle contraction. 2
7. What is osmotic stress? 2
8. What is the difference between excitatory and inhibitory neurotransmitters? 2

Part B (Answer any 4 questions. Each carries 6 marks)

9. Explain the concept of adaptations by citing examples in animal anatomy and physiology. 6
10. How would an ectothermic animal react to a sudden drop in temperature? 6
11. Discuss the structure and function of the integument in invertebrates. How do these features help in protection, respiration, and osmoregulation? Provide examples from different invertebrate groups to support your answer. 6
12. Identify and describe the three types of muscle tissue. Explain the primary function of each type. 6
13. Define osmotic stress and discuss how cells respond to changes in osmotic conditions. 6
14. Explain the roles of different parts of the brain (forebrain, midbrain, and hindbrain) in nervous control. 6

Part C (Answer any 1 question(s). Each carries 14 marks)

15. Critically assess the structure and function of photoreceptors in the insect and vertebrate eyes. How do rods and cones differ in their contribution to vision, specifically in varying lighting conditions? 14
16. (a) Explain the role of osmosis and diffusion in maintaining cellular homeostasis, providing suitable biological examples (7 Marks) 7
    (b) How do freshwater and marine fishes differ in their osmoregulatory strategies? (7 marks) 7