K26P 1238

Reg. No. : .....

Name : .....

Second Semester M.Sc. Degree (C.B.C.S.S. – O.B.E. – Reg./Supple./Imp.) Examination, April 2026

(2023 Admission Onwards)

ZOOLOGY/ZOOLOGY (STRUCTURE, PHYSIOLOGY, DEVELOPMENT AND CLASSIFICATION OF ANIMALS)

MSZGY02C08/MSZNG02C08 : Animal Physiology and Endocrinology

Time : 3 Hours Max. Marks : 60

PART – A

Answer **any five** of the following. **Each** question carries **3** marks. **(5×3=15)**

1. Define homeostasis and explain the role of negative feedback regulation.
2. What is saltatory conduction ? State its physiological advantage.
3. Define cardiac cycle and list its phases.
4. What is the Juxtaglomerular Apparatus (JGA) ? Mention its components.
5. Classify hormones based on chemical structure with examples.
6. Name the major endocrine glands of vertebrates and state function of each.

PART – B

Answer **any three** of the following. **Each** question carries **6** marks. **(6×3=18)**

7. A patient shows muscle weakness and reduced synaptic transmission. Discuss the physiology of neuromuscular junction and evaluate possible molecular defects.
8. During intense exercise, respiratory rate increases rapidly. Examine neural regulation of respiration and judge how it maintains acid-base balance.
9. Compare membrane-bound and nuclear hormone receptors and evaluate their relevance in pharmacological interventions.

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10. Discuss the hormonal regulation of molting in insects and critically evaluate endocrine disruption due to environmental chemicals.
11. Analyze the mechanism of blood clotting and judge the physiological consequences of impaired coagulation factors.

PART – C

Answer **any three** of the following. **Each** question carries **9** marks. **(3×9=27)**

12. A patient presents with hyperkalemia and reduced action potential propagation. Analyze the ionic basis of membrane potential and explain the physiological consequences.
13. Evaluate urine concentration and dilution mechanisms. Analyze how ADH dysfunction leads to diabetes insipidus.
14. A mutation alters a steroid hormone receptor's DNA-binding domain. Analyze how this affects gene expression and physiological function.
15. Critically evaluate endocrine control of reproduction in mammals. Analyze how disruption in hypothalamic – pituitary – gonadal axis affects fertility.
16. Assess thermoregulatory mechanisms in mammals and analyze physiological consequences of hypothalamic dysfunction.

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