

**B.Sc. 3rd Semester (Honours) Examination, 2023 (CBCS)****Subject : Zoology****Course : CC-VI****(Animal Physiology : Controlling and Coordinating Systems)****Time: 2 Hours****Full Marks: 40***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.***Group-A**

1. Answer *any five* questions of the following: 2×5=10
- What is the role of the hypothalamo-hypophyseal portal system?
  - Mention the contrasting role of troponin and tropomyosin.
  - What do you mean by all-or-none principle of action potential?
  - Differentiate between conditional and unconditional reflex action.
  - What is sliding filament model of skeletal muscle contraction?
  - 'Sertoli cells are nurse cell as well as phagocytic cells'— Explain.
  - Name one hormone each secreted from adrenal cortex and adrenal medulla.
  - What is blood-testis barrier?

**Group-B**

2. Answer *any two* questions of the following: 5×2=10
- Compare the way of working of chemical and electrical synapses. 5
  - Illustrate the process of the generation of action potential with a diagram. 5
  - With a labelled diagram describe the histological structure of pancreas. 2+3
  - What are different connective tissue types and mention their functions? 3+2

**Group-C**

3. Answer *any two* questions of the following: 10×2=20
- Name one hormone each secreted from zona glomerulosa and zona fasciculata. Add a note on their regulation of release, target organs and effects. 2+4+2+2
  - Describe the histological structure of thyroid gland with a suitable diagram. Briefly describe the functions of thyroid hormones. 4+2+4
  - State the characteristics of a reflex action. What is reflex arc? Mention the different components of reflex arc. 4+1+5
  - Compare and contrast between estrous cycle and menstrual cycle. Discuss the hormonal control of estrous cycle. 3+7