

2024

ZOOLOGY — HONOURS

Paper : CC-6

(Animal Physiology : Controlling and Coordinating System)

Full Marks : 50

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer **question nos. 1 and 2** and **any three** questions from the rest.

1. Answer **any five** questions : 2×5
 - (a) Mention two features of simple squamous epithelium.
 - (b) What are Nissl's granules?
 - (c) What is Haversian canal?
 - (d) Write two important differences between collagen fibre and elastin fibre.
 - (e) Define sarcomere.
 - (f) Name the hormones secreted by chromaffin cells.
 - (g) Mention the role of myelin sheath in myelinated nerve fibre.
 - (h) Name one placental hormone. Mention its function.
2. Write short notes on (**any two**) : 5×2
 - (a) Role of actin and myosin in muscular contraction
 - (b) Neuromuscular synaptic transmission
 - (c) Histological structure of mammalian thyroid gland
 - (d) Hypothalamo-Hypophyseal neuro-endocrine control pathway.
3. (a) Describe the different phases of action potential with diagram.
(b) Describe the role of oestrogen and progesterone in maintaining menstrual cycle. (4+2)+(2+2)
4. (a) Describe different types of white blood cells with suitable diagram.
(b) Distinguish between plasma and serum. (5+3)+2
5. (a) What is corpus albicans?
(b) Name one hormone synthesized from posterior pituitary and mention one of its function.
(c) Describe the histological structure of pancreas with diagram. 2+(1+1)+(4+2)

Please Turn Over

6. Distinguish between the following :

2½×4

- (a) Compact bone and spongy bone
- (b) Zona glomerulosa and Zona fasciculata
- (c) Chemical synapse and Electrical synapse
- (d) Actin and Myosin.

7. (a) Explain the steroid hormone receptor signalling pathway.

(b) Name two secondary messengers.

(c) Mention two behavioral changes and two ovarian changes observed in rats during estrous phase of estrous cycle.

5+(1+1)+[(½+½)+(1+1)]

8. (a) What is LH surge? Mention its significance.

(b) Mention the names and function of different types of bone cells.

(2+2)+(3+3)
