

U.G. 3rd Semester Examination - 2022**ZOOLOGY****[HONOURS]****Course Code : ZOOL-H-CC-T-06****(Animal Physiology : Controlling & Coordinating Systems)**

Full Marks : 40

Time : 2½ Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***A. Answer any five questions :****2×5=10**

- ✓ 1. What is POMC?
2. What is tetanic contraction?
3. Where do you find hydroxyapatites?
- ✓ 4. What is the mammalian zona pellucida?
5. Which epithelial tissue can change shape depending on the distention in the organ? Where is it found?
6. Distinguish between a cretin and dwarf.
- ✓ 7. What is oxygen debt and how is it repaid?
8. Name two chemical messengers that can act both as hormone and neurotransmitter.
- ✓ 9. Why is cartilage slow to heal?

[Turn over]

B. Answer any two:

5×2=10

- ✓ 1. Distinguish the signal transduction process of protein, steroid and thyroid hormones. 5
2. What are the different energy sources of muscle contraction? What is troponin complex and its role? 3+2
- ✓ 3. Define a reflex arc? Tapping on the patellar tendon causes the quadriceps to stretch and forces the lower leg to extend. Describe the arc involved in this process with diagram. 1+4
4. Describe the terms in relation to neuron: multipolar, pseudounipolar, tonic and phasic neuron, axon and dendron. 1+1+1+1+1
5. Describe the various hypothalamic nuclei with their function. Name the hormones produced in hypothalamus and liberated in pars nervosa? 4+1

C. Answer any two:

10×2=20

- ✓ 1. Describe histological peculiarities of Zona fasciculata and Zona reticularis with clear diagram. Why are they called so? What are Chromaffin cells? Write briefly on catecholamines. Distinguish primary and secondary adrenal insufficiency. 4+1+1+2+2

2. Distinguish AMP and RMP. Discuss about the ionic basis of RMP and AMP generation in a nerve. Give a word diagram stating the process of chemical synaptic transmission in brief 1+6+3

3. What does the name glucagon mean? Draw and describe the histology of the glandular portion that secretes insulin and glucagon. Describe the various pancreatic ducts. What is insulin resistance? Name two hormones derived from cholesterol.

1+5+2+1+1

4. ✓ Both bone and cartilage are type of connective tissue, how do they differ from each other? Give the composition of cartilage matrix. Which hormones control cartilage development?

5+3+2
