

B.Sc. Semester-III Examination, 2022-23**ZOOLOGY [Honours]**

Course ID : 32612 Course Code : SH/ZOO/302/C-6

Course Title : Animal Physiology : Controlling &
Coordinating Systems

Time : 1 Hour 15 Minutes

Full Marks : 25

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***UNIT-I**1. Answer any **five** of the following questions:

1×5=5

- Why electrical synapse is faster than chemical synapse?
- What is the key factor to start spermatogenesis at puberty?
- What is the role of GalT receptor of sperm in fertilization?
- Why cardiac muscles are known as functional syncytium?

- What is the fate of acetylcholine after nerve impulse transmission?
- What is hypothalamo-hypophyseal portal system?
- What is Grave's disease?
- What is portal triad?

UNIT- II2. Answer any **two** of the following questions:

5×2=10

- Describe the structure of a Haversian canal system in brief with proper diagram. What is Volkman's canal? 4+1
- What is capacitation? Write down the changes in sperm head by capacitation. What is acrosomal cap? 1+3+1
- What is neurohormone? Write down the functions of Oxytocin and Vasopressin.
When calcitonin hormone secreted from parafollicular cells of thyroid gland? 1+3+1
- What do you mean by resting membrane potential? Explain briefly the role of Ca⁺⁺ ions in contraction of skeletal muscle. 1+4

UNIT-III

3. Answer any **one** of the following questions:

10×1=10

- a) What is the main function of glucagon hormone?
Briefly describe the signalling pathway of glucagon via GPCR. Differentiate between steroid hormone receptor and thyroid receptor.

1+7+2

- b) Explain the role of cortical granules in blocking of polyspermy during fertilization. How mammalian oocytes overcome the metaphase II arrest?

5+5
