

Unique Paper Code: 32231302

Name of the Paper: Physiology: Controlling and Coordinating Systems

Name of the Course: B.Sc. (H) Zoology Examination, 2021-LOCF

Semester: III

Duration: 03 hours

Maximum Marks: 75

Instructions for Candidates:

Write your Course, Semester, Roll No., Paper Name, UPC, and Page No. on all the answer sheets used by you.

Attempt four questions in all. All questions carry equal marks. Draw relevant diagrams wherever required.

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Q.1. Illustrate with the help of well-labelled diagrams, the different types of contact points between cells that organize them into functional units. State the key components of the connective tissue, and its various types. How does the cartilage differ from bone, and add a note on the different types of cartilages and their location in the body?

(18.75 marks)

Q.2. What do you understand by the term 'gland'? With the help of well-labelled diagrams, describe the structural and functional differences between the various types of glands. Name two glands and its cells whose secretions exert opposite effects, and name a gland and its cells which secrete two different hormones whose actions are antagonistic to each other.

(18.75 marks)

Q.3. Define a twitch contraction, and a myogram. What are the different components of a myogram. What is wave summation? Discuss the effect of rate of stimulation on tetanus with suitable myograms. Why do we consider 'recovery oxygen uptake' a better term than 'oxygen debt' for the elevated use of oxygen after exercise?

(18.75 marks)

Q.4. Describe the histology of the ovary with the help of a well-labelled diagram. Name different hormones that affect the physiology of female reproduction with their role in uterine and ovarian cycle. Graphically explain the changes in concentration of anterior pituitary and ovarian hormones with the positive feedback effect of high levels of estrogens.

(18.75 marks)

Q.5. Name the anatomical and functional region between two successive neurons. What are the different types of neurotransmitters and their receptors? What do you understand by the trigger zone, EPSP and IPSP? Describe with the help of a suitable example.

(18.75 marks)

Q.6. A 60 year old woman suffered from severe fracture in her right shoulder after a minor fall while getting up from bed at midnight. What could be the possible reason/s for the fracture resulting from a minor fall? What would be the recommendations for people of this age to prevent encountering such problems?

(18.75 marks)