3. (a) Describe the mode of action of lipid soluble and water-soluble hormones. Give suitable examples for each. (8)

   (b) List the hormones secreted from the posterior pituitary and describe their functions. (4)

4. (a) Discuss the molecular basis of skeletal muscle contraction. (10)

   (b) What are ionotropic receptors? (2)

5. (a) How are sound waves converted into action potentials in the auditory nerve? (9)

   (b) Draw a well labelled diagram of a neuron. (3)

6. (a) Discuss the role of different hormones involved in the male reproductive physiology. (6)

   (b) Describe the functions of Sertoli cells. (6)

7. Write short notes on **any three** of the following :

   (a) Renin-Angiotensin-Aldosterone (RAA) pathway

   (b) Cell junctions

   (c) Types of cartilage

   (d) Oogenesis (3×4=12)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1414 **C**

Unique Paper Code : 32231302

Name of the Paper : Physiology: Controlling and Coordinating Systems

Name of the Course : **B.Sc. (Hons.) Zoology Exam-2022, LOCF**

Semester : III

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **Five** questions in all. Question no. **1** is compulsory.
3. Draw diagrams wherever required.

1. (a) Define the following terms : (4)

   (i) Synapse

   (ii) Osteoporosis

(iii) Tropic hormone

(iv) Epiphyseal plates

(b) Differentiate between the following : (10)

(i) Diabetes mellitus and Diabetes insipidus

(ii) Isotropic and anisotropic band

(iii) Spermatogenesis and spermiogenesis

(iv) Compact and spongy bone

(v) Somatotropin and somatostatin

(c) Expand the following **(any FOUR)** : (4)

(i) ICSH

(ii) PIF

(iii) hGH

(iv) IPSP

(v) ACTH

(vi) NOS

(d) Give the location and function of the following: (5)

(i) Chromaffin cells

(ii) Corpus luteum

(iii) T- tubules

(iv) Leydig cells

(v) Volkmann's canal

(e) Fill in the blanks : (4)

(i) Oxygen-binding protein found only in the muscle fibres is _____

(ii) Ligand-gated ion channels are present in _____

(iii) Simple columnar epithelium is specialised for _____ and _____

2. Compare the conduction of an action potential in a non-myelinated axon with that in a myelinated one. Which type of conduction is more energy-efficient and why? (9+3)

P.T.O.