

[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 6291

D

Your Roll No.....

Unique Paper Code : 223301

Name of the Course : **B.Sc. (Hons.) Zoology**

Name of the Paper : ZOHT-304 : Animal Physiology and Functional Histology

Semester : III

Time : 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.
3. Question No. 1 is compulsory.

1. (a) Define the following terms :

- (i) Muscle twitch
- (ii) Accomodation
- (iii) Ovulation
- (iv) Hyperpolarisation (4)

- (b) Differentiate between the following :

- (i) Merocrine and Apocrine gland
- (ii) Interstitial and Appositional growth of bone
- (iii) Graafian follicle and Corpus luteum
- (iv) Fused and Unfused Tetanus
- (v) Ion-gated and Ligand-gated channels (2×5=10)

- (c) Expand the following :

- (i) Ach
- (ii) GnRH
- (iii) ACTH
- (iv) hCG (4)

- (d) Give the function of the following :

- (i) Sarcoplasmic reticulum

P.T.O.

- (ii) Parafollicular cells
- (iii) Mammary glands (3)
- (e) Fill in the blanks :
- (i) _____ and _____ are the components of TRIAD.
- (ii) Hypersecretion of hGH during childhood causes _____ while during adulthood results in _____ .
- (iii) _____ and _____ are examples of inhibitory neurotransmitters. (6)
2. (a) What is an action potential ? Describe the events leading to generation of an action potential.
- (b) Explain why the action potential is an all-or -none phenomenon ? (2,8,2)
3. (a) Draw a well labelled diagram of T.S. Adrenal gland (mammal).
- (b) Give an account of the physiological effects of the hormones secreted by the adrenal gland. (4,8)
4. (a) Discuss the role of ATP and calcium ions in the excitation-contraction coupling in a skeletal muscle fibre.
- (b) State the condition in which the muscles become rigid after death and give reasons for the same. (10,2)
5. (a) Explain the mechanism of action of water-soluble hormones.
- (b) What changes take place in neurotransmitter release from photoreceptors in light and dark conditions ? (6,6)
6. (a) Draw a magnified view of transverse section of seminiferous tubule of mammalian testis.
- (b) Discuss the role of various hormones involved in male reproduction.
- (c) What is cryptorchidism ? (4,6,2)
7. Write short notes on the following topics: **(any three)**
- (a) Endochondral ossification
- (b) Saltatory conduction in medullary nerve fibres
- (c) Calcium homeostasis
- (d) Muscle proteins (4,4,4)
- (900)