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5942

Your Roll No. ....

**B.Sc. (Hons.) ZOOLOGY / III Sem. B**

**Paper IX – ZOHT – 304**

**Animal Physiology and Functional Histology – I**

*Time : 3 Hours*

*Maximum Marks : 75*

*(Write your Roll No. on the top immediately  
on receipt of this question paper.)*

*Answer Five question in all.*

*Q. No. 1 is compulsory.*

1. (A) Indicate the type of tissue associated with the following terms :

- (i) Neuroglia
- (ii) Titin
- (iii) Basement membrane
- (iv) Periosteum
- (v) Fluid matrix (5)

(B) Fill in the blanks :

- (i) Epimycium, perimycium and endomycium extend beyond the muscle to form \_\_\_\_\_.
- (ii) The exocrine glands that release their secretion by exocytosis are called \_\_\_\_\_.
- (iii) \_\_\_\_\_ is the process of development of haploid spermatid into sperm.

P.T.O.

- (iv) Progesterone is secreted by \_\_\_\_\_ .
- (v) Receptors for water soluble hormones lie \_\_\_\_\_ the plasma membrane. (5)

(C) Choose the correct answer for the following statements :

(a) Which of the following tissue is avascular ?

- (i) Compact bone
- (ii) Cardiac muscle
- (iii) Adipose tissue
- (iv) Striated muscle
- (v) Stratified squamous epithelium (5)

(b) Which of the following is not a hormone ?

- (i) Glucagon
- (ii) Adrenaline
- (iii) Rennin
- (iv) Progesterone (2)

(c) Hirsutism is due to :

- (i) Excessive androgen secretion
- (ii) Thyroxin deficiency
- (iii) Reduced cortisol in the body
- (iv) Insulin deficiency
- (v) Gonadotropin deficiency
- (vi) Deficiency of melatonin (3)

(D) Give functions of the following :

- (i) Ependymal cells
  - (ii) Leydig cells
  - (iii) Theca interna
  - (iv) Osteoclasts
  - (v) Mast cells
- (5)

(E) Give full form of the following :

- (i) GABA
  - (ii) EPSP
  - (iii) SON
  - (iv) LTH
- (2)

2. (a) Give the detailed structure of a neuron.
- (b) Explain the local circuit theory for the conduction of nerve impulses.
- (c) How is saltatory conduction different from continuous conduction of impulses? (3,7,2)
3. (a) Give in detail the microscopic structure of retina. Explain the physiology of vision.
- (b) Explain the events of signal transmission at a chemical synapse? (6,6)
4. (a) Discuss the structural modifications of epithelium.

- (b) Describe the steps of intramembranous and endochondral ossification. (4,8)
5. (a) What are the three different types of skeletal muscle fiber proteins ?
- (b) Give the components of a sarcomere and explain sliding filament mechanism of contraction of the skeletal muscle. (3,9)
6. Describe the major events of each phase of the uterine cycle and correlate them with the events of the ovarian cycle. What are the hormonal changes that occur during the reproductive cycle ? (12)
7. (a) Give the structure, function and regulation of thyroid gland and the diseases associated with it.
- (b) Explain the role of hypothalamo-hypophyseal portal system in hormonal regulation of the pituitary. (9,3)
8. Write short notes on any **three** of the following :
- (i) Physiology of hearing
  - (ii) Dense connective tissue
  - (iii) Ovulation
  - (iv) Structural muscle proteins
  - (v) Motor unit (4,4,4)