

This question paper contains 4+2 printed pages]

Your Roll No.

1347

B.Sc. (Hons.)/III

A

ZOOLOGY—Paper VI

(Physiology and Functional Histology)

(Admissions of 2004 and onwards)

Time : 3 Hours

Maximum Marks : 55

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

Attempt *Five* questions in all, including

Question No. 1 which is compulsory.

1. (A) Define the following : 3

(i) Aponeurosis

(ii) Physiological dead space

(iii) Homeostasis.

P.T.O.

(B) Fill in the blanks :

4

(i) The end products of chemical digestion of nucleic acids are.....and.....

(ii) Osmoreceptors respond to changes in.....conc. but not to changes in.....conc.

(iii)the consolidation or tightening of the fibrin clot that helps to bring the edges of a damaged vessel closer together.

(iv) The.....cells andcells are particularly important for lateral interactions in the retina.

(C) Expand :

2

(i) ICSH

(ii) ANP

(iii) DPG

(iv) RQ

(D) Mention True or False :

3

- (i) Stimulation of vagus nerve decreases the heart rate.
- (ii) Apnea is the state in which respiration is temporarily suspended.
- (iii) Acetyl choline is exclusive neurotransmitter of neuromuscular junction.
- (iv) Sodium ions are dominant cation of extracellular fluid.
- (v) The ability of muscle cells to respond to stimuli and produce electrical signals is known as excitability.
- (vi) Plasma creatinine is produced from the catabolism of creative phosphate in the skeletal muscles.

- (E) Define the following : 2
- (i) Portal triad
 - (ii) Fused tetanus
- (F) Give *one* important function of the following : 1½
- (i) Type II (Thick cells) in alveoli
 - (ii) Brünners gland
 - (iii) Sertoli cells.
- (G) Differentiate between osteoblast, osteocyte and osteoclast cells. 1½
- (H) Name 4 types of neuroglial cells. 2
- 2 (A) Outline the steps involved in the sliding filament mechanism of skeletal muscle contraction. 6
- (B) Explain Hering and Breuer arc with proper diagram. 3

3. (A) Define cardiac output. Describe the factors that affect the regulation of stroke volume. 6
- (B) Give a diagrammatic representation of the major hormonal changes that occur during menstrual cycle. 3
4. (A) Write an account of the tubular reabsorption of glucose, water and inorganic salts. 6
- (B) Explain Hypothalamo-hypophyseal portal system with suitable diagram. 3
5. (A) What is the difference between digestion and absorption ? How are the end products of carbohydrate and protein digestion absorbed ? 6
- (B) Describe the histology of pancreas. 3
6. (A) Discuss in detail the basic types of ion channels and explain how these relate to graded potentials and action potentials. 5

- (B) Describe in detail the three steps that contribute to hemostasis. 4

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

(i) Adrenal gland (Histology and function)

(ii) Color Vision

(iii) Coronary circulation

(iv) Bone growth and ossification

(v) Artificial kidney and dialysis.

3,3,3