

This question paper contains 3 printed pages]

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S. No. of Question Paper : 2357

Unique Paper Code : 2491401

F-4

Name of the Paper : Human Physiology

Name of the Course : B.Sc. (Hons.) Bio-Chemistry

Semester : IV

Duration : 3 Hours

Maximum Marks : 75

*(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) Expand and give the physiological significance of the following :

(i) LTP

(ii) CCK

(iii) 2, 3 BPG

(iv) MCV

(v) FSH.

5×2

(B) Define the following :

(i) Hemostasis

(ii) Diuretics

(iii) Acrosomal reaction

(iv) Retropulsion

(v) Cardiac output

(vi) Ossification.

6×1.5

P.T.O.

2. Differentiate the following :

- (i) Arteries and veins
- (ii) Respiratory and metabolic acidosis
- (iii) Neuronal and glial cells
- (iv) Obstructive and Hemolytic Jaundice
- (v) Blood brain barrier and blood testis barrier
- (vi) IPSP and EPSP
- (vii) Polycythemia and Anemia.

7×2

3. Outline the sequence of events in the following processing (in a flow chart) :

- (i) Spermatogenesis
- (ii) Pain perception
- (iii) Regulation of Arterial pressure during Hemorrhage
- (iv) Extrinsic pathway of blood coagulation
- (v) Enterohepatic circulation.

3,3,3,3,2

4. Comment on the following :

- (i) A blunt cut bleeds less as compared to a sharp cut.
- (ii) Peripheral chemoreceptors control pulmonary ventilation.
- (iii) End diastolic volumes regulate cardiac output.
- (iv) Placenta is a feto-maternal tissue.
- (v) The cardiac muscle unlike the skeletal muscle is not prone to tetanic convulsion.
- (vi) Neuroendocrine factors regulate gastric acid secretion.
- (vii) Creatinine can be used to measure GFR.

7×2

5. (A) Draw a neatly labelled diagram of the following :
- (i) Structure of the sarcomere
  - (ii) Divisions of the cerebral cortex
  - (iii) Juxtaglomerular apparatus.
- (B) Graphically outline the relation between Electrocardiograph, Cardiac cycle, Heart sound and ventricular volumes. 9,5
6. Discuss the following :
- (i) The function of the vasa recta in maintaining a hypertonic interstitial renal medulla. How does this relate to urine volume ?
  - (ii) A child having a genetic sex XO, becomes a female phenotypically.
  - (iii) How is bone formed from cartilage ? 5,5,4
7. Answer in brief :
- (i) What is Lung compliance ? What are the factors that determine it ?
  - (ii) What is polyspermy ? What are the events leading to fertilization ?
  - (iii) How is HCl secreted in the stomach and what are the causes for peptic ulcers ? 5,5,4
8. Write short notes on the following :
- (i) Myocardial infarction
  - (ii) Pulmonary distress
  - (iii) Renal failure
  - (iv) Sleep. 4×3.5