

This question paper contains 4 printed pages]

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S. No. of Question Paper : 1721

Unique Paper Code : 2492013601

Name of the Paper : Human Physiology

Name of the Course : B.Sc. (Hons.) Biochemistry

Semester : VI (NEP)

Duration : 2 Hours

Maximum Marks : 60

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

There are *six* questions.

Attempt *four* questions in all.

All questions carry equal marks.

Question No. 1 is compulsory.

1. (A) Explain the following statements :

- (a) Trophoblastic cells are responsible for implantation.
- (b) Deficiency of vitamin K leads to haemorrhage.
- (c) Conduction in myelinated axons is faster than in an unmyelinated axon.

P.T.O.

(d) The Haldane effect approximately doubles the amount of carbon dioxide released from the blood in the lungs.

(e) The pyloric sphincter regulates gastric emptying.

(B) Define the following :

(a) Systole

(b) Oogenesis

(c) Tidal volume

(d) Homeostasis

(e) Peristalsis.

10,5

2. (A) Explain the various events of cardiac cycle.

(B) Elaborate on the importance of enterohepatic circulation.

(C) Differentiate between respiratory and metabolic acidosis. 5,5,5

3. (A) Explain, how counter-current mechanism helps to generate hyper-osmotic urine ?

(B) How is glomerular filtration rate regulated as part of baroreceptor complex ?

- (C) Calculate the renal clearance of the substance X when its plasma concentration is 4 mg/ml, its urine concentration is 300 mg/ml and rate of urine formation is 0.1 L/hr.
- (D) The chemical composition of CSF is different from that of blood. Explain. 5,4,3,3
4. (A) Explain the significance of the following :
- (a) Capacitation of sperm.
 - (b) Feto-placental maternal unit
 - (c) High levels of estrogen before parturition.
 - (d) Spermatogenesis.
- (B) Describe how the pancreatic enzymes become activated in the lumen of the intestines. Why are these mechanisms needed ? 12,3
5. (A) Explain the mechanism of excitation-contraction coupling in muscles.
- (B) What is Bohr's effect ? Elaborate.
- (C) Diagrammatically represent the respiratory control centre in the brain stem and explain how control of respiration is achieved ? 5,5,5

(4)

1721

6. Differentiate between :

3×5=15

- (a) Arteries and Veins
- (b) Depolarization and Repolarization
- (c) Central and Pperipheral nervous systems
- (d) Submucosal and Myenteric plexus
- (e) Extrinsic and Intrinsic pathway of blood coagulation.