

[This question paper contains 4 printed pages.]

Sr. No. of Question Paper : 7952

F-2

Your Roll No.....

Unique Paper Code : 2581202

Name of the Course : B.Sc. (H) Biomedical Sciences [DC-1.4]

Name of the Paper : Human Physiology and Anatomy I

Semester : II

Duration : 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.
4. Subparts of the questions should be attempted together.
5. Draw illustrations or diagrams wherever necessary.

1. (a) Differentiate between :

- (i) Short term and long term memory
- (ii) Natural and synthetic anticoagulants
- (iii) Salivary and pancreatic amylase action
- (iv) Isometric and isotonic muscle contraction

(1.5×4=6)

(b) Define :

- (i) Oxygen debt
- (ii) Coronal plane
- (iii) Hematocrit
- (iv) Lateral inhibition
- (v) Edema

(1×5=5)

P.T.O.

(c) Explain :

- (i) There is no abnormality in the first child when Rh negative mother carries Rh positive fetus.
- (ii) It is difficult to contract a muscle that has been overstretched.
- (iii) In lactose intolerance, diarrhoea is produced by the increased osmolarity of the contents of the intestinal lumen.
- (iv) Two divisions of ANS act synergistically in any given situation. (1.5×4=6)

(d) Expand the following :

- (i) EPSP
- (ii) vWF
- (iii) EEG
- (iv) GABA (0.5×4=2)

2. Write short notes on :

- (i) Various cells of the epidermis
- (ii) Brain waves
- (iii) Dark adaptation
- (iv) Sliding filament theory of contraction (3,3,4,4)

3. (a) What is a neurotransmitter ? Describe the release, action and inactivation of acetylcholine at neuromuscular junction. (4)

(b) Define muscle fatigue. Discuss briefly the characteristic features of fast and slow twitch fibers. (4)

(c) Give location and function of the following :

- (i) Chief cells

- (ii) Fovea centralis
 - (iii) Tonsils
 - (iv) Melanin
 - (v) Enterokinase
 - (vi) Gap junctions (1×6=6)
4. (a) Explain the brain areas involved in control of speech. (2)
- (b) Define Resting Membrane potential. Discuss the factors which maintain Resting Membrane potential. (4)
- (c) Give **one** word for
- (i) Outward bulges or pouches on outer surface of colon.
 - (ii) Large fiber tract which connect the left and right hemispheres of cerebrum.
 - (iii) The cells of myelin sheath of neurons of CNS.
 - (iv) Variation in shape of RBCs.
 - (v) The specialized region of sarcolemma at the neuromuscular junction. (1×5=5)
- (d) Discuss briefly about the causes of hemolytic, aplastic and sickle cell anemia ? (3)
5. (a) Explain digestion and absorption of lipids. (3)
- (b) Draw a well labeled diagram of following (any **three**) :
- (i) Section of spinal cord
 - (ii) Section of skin
 - (iii) A taste bud
 - (iv) Section of liver lobule (6)

- (c) What happens to muscles when they are exercised :
- (i) Regularly
 - (ii) Vigorously as in weight lifting
 - (iii) Not used (2+2+1)
6. (a) What is synaptic integration ? Explain with suitable diagram. (3)
- (b) What are connective tissues ? Discuss its common characteristic features. List different types of connective tissues. (5)
- (c) Describe different types of cutaneous receptors. Which of the cutaneous receptor types is most numerous and why ? (3)
- (d) List the functions of :
- (i) Thalamus
 - (ii) Cerebellum (3)