[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1391 **I**

Unique Paper Code : 3182011103

Name of the Paper : Human Physiology and Anatomy I

Name of the Course : **B.Sc. (H) Biomedical Sciences**

Semester : I (NEP-UGCF)

Duration : 3 Hours Maximum Marks : 90

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 : (2×4=8)

   (i) Sagittal and Coronal plane

   (ii) Hyaline and fibrous cartilage

   (iii) Iron deficiency anaemia and folic acid deficiency anaemia

P.T.O.

(iv) Calcification and Ossification

(b) Define : (2×5=10)

(i) Motor end plate (ii) Anaemia

(iii) Myopia (iv) Chondroblast

(v) Synapse

(c) State True/False and justify (**any four**) : (2×4=8)

(i) A nerve never shows all and none phenomenon.

(ii) In the blood smear of leukemic patients several band neutrophils are seen.

(iii) Injury to the epidermis does not lead to excessive bleeding.

(iv) Organ do not float inside our body.

2. Write short notes on : (4×4=16)

(i) Platelet Plug formation

(ii) Reflex and reflex arc

(iii) Hemoglobin and its function

(iv) Joints and their classification

3. (a) A mountaineer was asked to stay at the base camp for a week before climbing till mountain peak. Give reasons for its stay and explain the pathophysiology of changes seen in blood.

(b) Describe the sympathetic response in a frightening situation for each of the following body parts: hair follicles, iris of eye, lungs, heart, arterioles of the abdominal viscera, and arterioles of skeletal muscles.

(c) Explain how the organization of actin and myosin in smooth muscle cells differs from their organization in striated muscle cells. What are the advantages of these differences? (5,5,6)

4. (a) Give Location and function of the following : (2×6=12)

(i) Meissner corpuscle

(ii) Arrector pili

(iii) Periosteum

(iv) Sarcomere

(v) Corpus Striatum

(vi) Circumvallate Papillae

(b) An unidentified dead body was found in a street. The dead body was rigid. It was handed over to the police. Why was the dead body rigid and what is that condition called? Why does damaged cartilage heal slowly? (4)

P.T.O.

5. (a) Describe the general features of epithelial tissue. How is the structure of the following kinds of epithelium related to their functions: simple squamous, ciliated simple columnar, stratified squamous (keratinized and nonkeratinized)?

(b) Explain the events of signal transmission at a chemical synapse. Distinguish between spatial and temporal summation.

(c) Give one word for the following :

(i) Bone building cells.

(ii) Gap junctions of the cardiac muscle tissue.

(iii) Supporting cells which line the cavities of the brain and spinal cord.

(iv) Middle ear ossicle attached to oval window.

(v) Blood cells with kidney shaped nucleus.

(6,5,5)

6. Draw well labelled diagram for the following structures. (5,5,6)

(i) T.S. of Skin

(ii) Types of bone cells

(iii) T.S. of a Muscle

(200)