**CBSE TEST PAPER-02**

**CLASS - XI BIOLOGY**

**(STRUCTURE ORGANISATION IN ANIMALS)**

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**General Instruction:**

- All questions are compulsory.
- Question No. 1 to 4 carry one marks each. Question No. 5 to 9 carry two marks each. Question No. 10 to 11 carry three marks each.

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1. Which tissue has fat globules?

2. Name two anticoagulants of blood of man.

3. Name the type of epithelium that lines the inner surface of stomach.

4. What causes fatigue of the muscle fibres?

5. Discuss the structure of haversian system in the histology of bone.

6. Distinguish between myosin and actin filament.

7. What are chondriocytes? Where are they found?

8. Name the major class of plasma protein and mention their functions.

9. What is the function of nephridia?

10. How do erythrocytes transport oxygen and carbon dioxide in the blood?

11. Describe the different types of connective tissues on the basis of matrix .

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**[ANSWERS]**

1. Adipose tissue.
2. Heparin & antiprothrombin.
3. Columnar epithelium.
4. Fatigue of muscles fibres is caused by the accumulation of lactic and other changes in it due to prolonged contraction.
5. Bone consists of connective tissue having matrix surrounded by periosteum. In mammalian bone haversian canal which carry blood vessels & nerves of the bone are surrounded by a number of concentric lamellae of intercellular matrix & bone.
6.

| MYOSIN FILAMENT | ACTIN FILAMENT |
|---|---|
| i) It is found in only A- band | i) It is found in I band & also projects in A-band. |
| ii) It is thicker (100A) | ii) It is thinner (50A) |
| iii) Cross bridges are present | iii) Cross bridges are absent |
| iv) About 1500 myosin filaments are found per myofibril | iv) About 3000 actin filament are found per myofibril. |

7.Chondrocytes are mature cartilage cells placed in the lacunae of the cartilage matrix.. Chondriocytes occurs in clusters of 2 or 3 cells in small spaces called the lacunae.

8. Three major classes of plasma proteins are:-

a) Serum b) Serum globulin c) Fibrinogen

FUNCTIONS OF PLASMA PROTEINS:-

i) Providing body immunity

ii) Prevention of blood loss.

iii) Retention of fluids in the blood.

iv) Transport of material

v) Maintaining PH of blood.
vi) Conducting heat to skin for dissipation.
9. Nephridia, coiled tubular duct-like organs, filter and remove waste from an earthworm's body. It regulate the volume and composition of the body fluids.
10.(a) Erythrocytes consist of a red coloured pigment called haemoglobin.
(b) Haemoglobin is a complex protein and is composed of:
(i) A protein called globin.
(ii) Fe2+ porphyrin ring called haem.
(c) Haemoglobin transports 02 in the form of ! oxyhaemoglobin from the lungs to the tissues.
(d) When oxyhaemoglobin reaches the tissue, where ! there is low oxygen pressure, oxyhaemoglobin dissociates into oxygen and deoxyhaemoglobin.
(e) C02 producing in the tissue reacts with the amine
radicals of haemoglobin and forms carbamino haemoglobin and is transported outside in this form.
11. On the basis of matrix, connective tissues are of two main types:-
I) Connective tissue proper:- It connects & supports many tissues & organs. Its matrix is dense.
i) Areolar tissue :- Areolar Tissue is loose connective tissue that consists of a meshwork of collagen, elastic tissue, and reticular fibres - with many connective tissue cells in between the meshwork of fibres.They secrete collagen and elastin proteins for the fibres.
ii) Adipose tissue:- This is loose connective tissue composed of adipocytes. It is technically composed of roughly only 80% fat. Its main role is to store energy in the form of lipids, although it also cushions and insulates the body.
II) Supportive connective tissues :- It consists of following types of connective tissue:-
i) Cartilage:-This is a flexible connective tissue. Cartilage is composed of specialized cells called chondroblasts and, unlike other connective tissues, cartilage does not contain blood vessels
ii) Bone:- The matrix consists of bone cells, osteocytes, fibres and a ground substance impregnated by calcium phosphate, calcium carbonate, magnesium phosphate and calcium fluoride. Due to these salts, it becomes very hard and forms skeletal support of body.