CBSE TEST PAPER-02

CLASS - XI BIOLOGY (Body fluids and circulation)

General Instruction:

- All questions are compulsory.
- Question No. 1 to 3 carry one marks each. Question No. 4 to 6 carry two marks each. Question No. 7 and 8 carry three marks each. Question No. 9 carry five marks.

1. In which mammal, the RBC are nucleated?

2. Name any two substances which prevent blood coagulation in uninjured blood vessels.

3. Name the type of granulocytes that play an important role in detoxification?

4. Name the different types of granulocytes. Give the function of the one which constitutes maximum percentage of total leucocytes.

5. Why is closed circulatory system considered advantageous?

6. What it is the name of the straw coloured fluid left after clotting of blood? How is it different from blood?

7. Write a note on “Regulation of cardiac activity”?

8. Why does lymph contain much less proteins than the blood plasma? Name the two principal lymph vessels in humans.

9. What is lymphatic system? Discuss its importance.

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[ANSWERS]

Ans 01. Camel.

Ans 02. Heparin, Antithrombin.

Ans 03. Eosinophils.

Ans 04. Different types of granulocytes are:
(i) Neutrophils – 62%
(ii) Acidophils (eosinophils) – 3%
(iii) Basophils - 0.5% to 1%
Neutrophils are phagocytic i.e, responsible for protection against infection.

Ans 05. Closed circulatory system is considered advantageous for the following reasons-

a) It maintains sufficient high blood pressure, blood flows at a high velocity; this quickens the supply of needed material and removal of wastes from the tissues.
b) The volume of blood flowing to a particular organ / tissues can be regulated to the need of the tissues.

Ans 06. It is called serum
Plasma without coagulation factors is called serum.
It differs from plasma in having much less quantity of proteins; it is outside the blood vessels.

Ans 07. (i) The special neural centre located in medulla oblongata of brain can moderate cardiac function through autonomic nervous systems. Therefore help in controlling heart regulation.
(ii) The parasympathetic neural signals, (component of ANS) decrease rate of heart beat, speed of conduction of action potential and also the cardiac output.
(iii) The adrenal medullary hormones enhance cardiac output (C.O).
(iv) The neural signals through sympathetic nerves may increase heart beat rate and the strength of ventricular contraction and also cardiac output.

Ans 08. Lymph contains mush less protein than plasma, because the capillary wall is impermeable to larger molecules like proteins.
The two principle lymph vessels are – Right lymphatic duct and thoracic duct.

Ans 09. Lymph is a colourlese tissue fluid resembling the blood except that it has no haemoglobin and RBCs. In comparison to blood, lymph contains less blood proteins, more of waste matter, increased amount of food material and a large number of WBC's
The tissue fluid is filtered from the blood plasma through the walls of capillaries some WBC also come out from there capillaries Now this tissue fluid enters into lymphatic capillaries as is known as lymph so the tissue fluid is converted into lymph.

Circulation of lymph:
Lymph vessels : Almost all of the body organs have a large number of lymph vessels and lymph capillaries. The walls of lymph vessels have valves (like veins).
They form the network in the organs – one is superficial and other is deep seated. The flow of lymph in these vessels is only one side i.e., from the organs but never to the organs. In human body the following two large lymph vessels are present.
Ductus Thoracious – It start from the abdominal cavity with a dilation called receptaculum chyli. Then it passes into the thoracic cavity then to the left of the neck region. It receives the lymph from the following organs – lower extremities, region of the true pelvis, abdominal region, left upper extremities the left half of the thorax, head, face & neck.
Lymph nodes – These are small globular masses of lymphatic tissue and these arranged in groups from each region organs of the body the lymph flows into definite lymph nodes. The nodes are called regional nodes.

Function of lymph:
(i) It serves to return interstitial fluid into blood.
(ii) It allows plasma proteins macromoleclues to diffuse through the lymph vessels.
(iii) It transport digested fat through lacteals in villi of intestine.