



SHIKSHA CLASSES

Sub. : Science

Answer Paper

Marks : 20

Std. : VIIIth - S.B.

11. Human Body and Organ System

Q.1(A) : Choose the correct alternative

2

1) From which organ does respiratory system of man begin?

Ans : d) Nose

2) Which blood vessels bring deoxygenated blood to the right atrium?

Ans : a) Superior and inferior vena cava

Q.1(B) : Solve any one of the following question

1

1) Find the odd one out.

A,O,K,AB,B.

Ans : K

2) Match the pair.

Ans : Group A

Answer

a) RBC

2) 50-60 lakh/mm³

b) WBC

1) 5000-6000 per mm³

3) What is hypertension?

Ans : **Hypertension or High Blood Pressure:** The blood pressure value of 140 – 159 mm Hg which is more than the normal blood pressure is called hypertension or high blood pressure.

Q.2(A) : Give reason (Any One)

2

1) Heart is covered by double layered pericardial membrane.

Ans : Pericardium is the protective double membrane that covers the heart. In between the two layers of this membrane there is protective fluid. The pericardium and the fluid together protect the heart from friction and mechanical shock. Since heart is a vital organ, it is well protected by such pericardial membrane.

2) A very large number of alveoli is present in lungs, which are covered over by capillary network.

Ans : Due to very large number of alveoli the surface area of the lungs is increased many a times for the gaseous exchange. The alveoli are covered over by capillary network for rapid gaseous exchange.

The oxygen is taken in the body and at the same time carbon dioxide is given out of the body only by the gaseous exchange occurring at the alveolar surface.

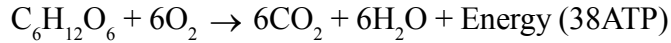
Q.2(B) : Solve any two of the following question.

4

1) Write short notes on the following : Cellular respiration

Ans : Cellular respiration :

- Ans :** 1) During respiration, the glucose molecules along with some other soluble nutrients are slowly oxidized with the help of oxygen in each cell.
- 2) In this process the energy is released in the form of ATP, CO₂ and water vapours are produced.
- 3) These products are not needed for the body and hence given out of the body in exhalation.
- 4) This process of cellular respiration is shown by the following reaction:



2) Under which conditions, blood is required for donation?

Ans : Whenever there is hemorrhage, the patient requires blood. Such patients are accident victims, those who excessively bleed, women during childbirth (parturition) and for patients undergoing surgeries.

3) Name any four proteins present in the blood plasma.

Ans : The proteins present in the blood plasma are albumin, globulins, fibrinogen and prothrombin.

4) What are the heart sounds and why are they produced?

Ans : There are two types of heart sounds, one is 'lub' and other is 'dub'. These are produced due to closure of the heart valves.

Q.3 : Solve any two of the following question.

6

1) Write the difference between Arteries and veins.

Ans :

Veins	Arteries
1) Carries blood from tissues of body to the heart.	1) Carries blood back away from heart to tissues of the body
2) Are usually found closer beneath the skin	2) Found deeper within the body
3) Are less muscular than arteries	3) Are more muscular than veins
4) Collapse if blood flow stops	4) Would generally remain open even if flow stops because of the muscular structure

2) Define the following terms:

Ans : a) **Inhalation:** Inhalation is taking in air through the nose from the surrounding

b) **External respiration:** The processes of inhalation and exhalation both together are called external respiration.

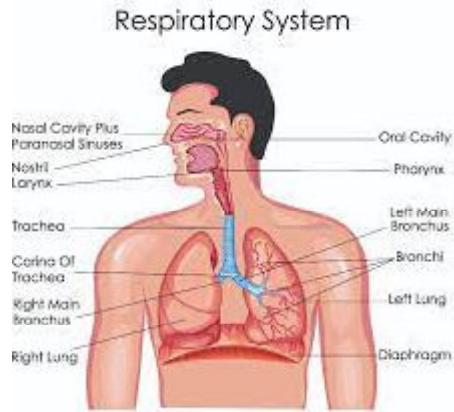
c) **Thermoregulation:** Maintenance of the body temperature to a constant level by performing vasoconstriction or vasodilation is called thermoregulation.

3) Explain: person with 'O' blood group is considered as 'Universal donor'

Ans : Person with 'O' blood group is considered as 'universal donor' because such an individual can donate blood to a person having any other blood group.

4) Draw neat and labeled diagram of Respiratory system.

Ans :



Q.4 : Solve any One of the following question.

1) Explain with neat diagram the internal structure of heart.

Ans : i) Human heart is four chambered muscular organ.

ii) The size of the heart is about one's own fist and its weight is about 360 gm.

iii) For protection, it is covered over by double-layered pericardium.

iv) The wall of the heart is made up of cardiac muscles which are involuntary in nature. They have the capacity of rhythmic beating.

v) The upper two chambers are called right and left atrium and lower two chambers are called right and left ventricle.

vi) Between right atrium and right ventricle there is tricuspid valve which guards the opening. Similarly between left atrium and left ventricle there is bicuspid valve.

vii) On entire right side of the heart there is deoxygenated blood.

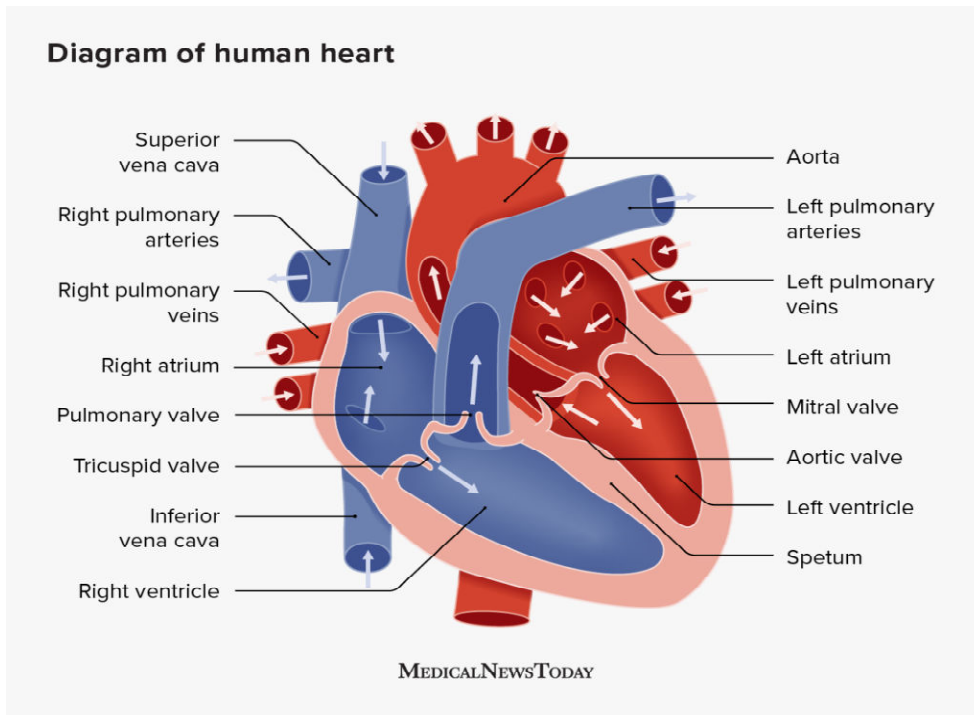
viii) On entire left side of the heart there is oxygenated blood.

ix) Right atrium receives deoxygenated blood by superior and inferior vena cava. These two major veins bring deoxygenated blood from entire body to the heart.

x) Left atrium receives oxygenated blood from lungs by pulmonary vein.

xi) Right ventricle sends the deoxygenated blood to lungs for oxygenation, through pulmonary artery.

xii) Left ventricle supplies oxygenated blood to entire body through systemic aorta. Between right atrium and right ventricle there is tricuspid valve which guards the opening. Similarly between left atrium and left ventricle there is bicuspid valve.



2) Explain the importance and need of blood donation.

Ans : Blood can never be synthesized artificially. There is no substitute for natural blood. Every healthy person possesses about 5 litres of blood in his or her body. In case of haemorrhage i.e. blood loss, the blood volume may reduce which can result into threat to life. Moreover, the loss of blood should be immediately taken care of, otherwise it may cost the life.

Therefore blood transfusion is very crucial in case of victims of accidents, patients of surgeries or mothers who suffer from blood loss during childbirth (parturition). Some diseases such as thalassemia, blood cancer, etc. also need regular transfusions. Therefore, blood is always needed in many such conditions. Blood donation is only option for such transfusions.

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