

Chapter 6 - The Circulatory System

Multiple Choice Questions:

1. Put a tick mark (✓) against the correct alternative in the following statements:

(a) The only artery which carries deoxygenated blood is called,

1. Hepatic artery
2. Pulmonary artery
3. Aorta
4. Renal artery

Solution: 2. Pulmonary artery

(b) Pulmonary vein carries

1. Oxygenated blood
2. Deoxygenated blood
3. Glucose-deficient blood
4. CO_2 laden blood

Solution: 1. Oxygenated blood

(c) Function of WBCs is to

1. Transport oxygen
2. Help in clotting of blood
3. Provide immunity
4. Provide storage of food.

Solution: 3. Provide immunity

(d) Blood Capillary is a

1. Broad tube
2. Artery with thick wall
3. Vein with large lumen
4. Narrow tube made up of endothelium only.

Solution: 4. Narrow tube made up of endothelium only.

(e) Nucleus is absent in

1. RBCS
2. RBCs
3. All blood cells
4. Liver cells.

Solution: 2. RBCs

(f) Sphygmomanometer measures

1. Pulse rate
2. Heart beat
3. Blood pressure
4. Brain activity

Solution: 3. Blood pressure

(g) The blood tastes saltish due to the presence of dissolved:

1. Sodium chloride
2. Potassium chloride
3. Ammonium nitrate

4. Sodium nitrate

Solution: 2. Potassium chloride

Short Answer Questions:

Question 1.

1. Differentiate between the following pair of terms:

- (a) Pulmonary artery and pulmonary vein.
- (b) Vena cava and aorta.
- (c) Platelets and WBC.
- (d) PBC and WBC

Solution: (a)

Pulmonary artery and pulmonary vein.

Pulmonary artery	Pulmonary vein
1. The involves the transfer of blood from the heart to the lungs	1. This involves the transfer of blood to the heart from the lungs
2. Deoxygenated blood is carried	3. Oxygenated blood is carried

(b) Vena cava and Aorta

Vana cava	Aorta
1. Vana cava is a large vein	1. Aorta is the large artery
2. It carries deoxygenated blood from the upper and lower parts of the body i.e. head and shoulders.	2. It carries oxygenated blood to all parts of the body through its branches.

(c) Blood platelets and blood group.

Platelets	WBC
1. These are colourless, oval or round, cytoplasmic fragments	1. WBC is colourless, and it has a lack of haemoglobin, bigger in quantity, and have different oval and lobed nucleus.
2. These are important for blood clotting	2. They provide immunity that protects our body from diseases.

3. Their life period is 3-5 days, and it is called thrombocytes.	3. Their life period is short, i.e. 5 to 20 days.
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RBC and WBC

RBC	WBC
1. They do not have a nucleus at maturity.	1. They have a large characteristic nucleus.
2. They possess haemoglobin and are red.	2. They are colourless as they have no pigment.
3. They help in the transport of respiratory	3. They help in a defence mechanism.

Question 2.

Give any three differences between an artery and a vein:

Solution:

Following are the differences between the artery and a vein:

Artery	Vein
1. Arteries transfer blood from the heart to various body parts.	1. Veins transfer blood from different body parts to the heart.
2. These carry oxygenated blood (except the pulmonary artery).	2. These carry deoxygenated blood (except the pulmonary vein).
3. Blood flows with high speed and under high pressure.	3. Blood flows with low speed and under low pressure.

Question 3.

Fill in the blanks with suitable words given below:

Solution:

a. The two lower chambers of the heart are called ventricles.

Question 4.

In which organ of our body does blood get oxygenated?

Solution:

Blood becomes oxygenated in the lungs. The oxygenated blood is returned to the left ventricles by the pulmonary vein.

Question 5.

Which side of the heart (left or right) contains oxygenated blood?

Solution:

The left side of the heart carries oxygenated blood.

Question 6.

What is the role of haemoglobin in the blood?

Solution:

The respiratory pigment called haemoglobin, which is formed of the iron-containing part known as Haemin and protein part known as globin. It helps to transport respiratory gases (oxygen).

Question 7.

Name the disease in which the number of platelets reduces to 25,000-30,000 per cubic mm of blood. State its major symptoms.

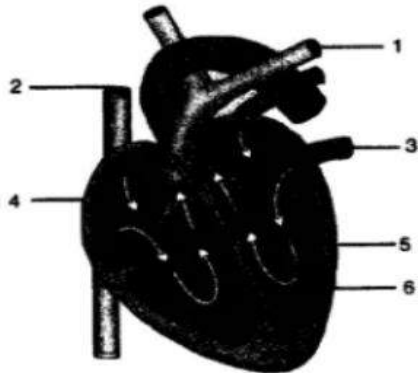
Solution:

The number of platelets gets reduced to as low as 25-30 thousands per cubic mm of blood by a disease called dengue fever. The major symptoms of dengue are high fever, rashes or red spots on body, nausea or vomiting, pain in the abdomen, back, or back of the eyes and muscles.

Long Answer Questions:

Question 1.

Given alongside is a diagram of the human heart showing its internal structures? Label the marked 1 to 6 and Solution the following questions.



- (a) Which type of blood is carried by the blood vessel marked 2?
- (b) Name the main artery which takes the blood from the heart to different parts of the body?
- (c) Which chamber of the heart receives deoxygenated blood from the body?

Solution:

1. Left pulmonary artery
 2. Superior vena cava
 3. Left pulmonary vein
 4. Right auricle
 5. Left auricle
 6. Left ventricle
- (a) Deoxygenated blood.
- (b) Aortic arch (Aorta).
- (c) Right Atrium

Question 2.

You can see some blood vessels on the outside of the hands especially in older people. Are those veins or arteries? How can you confirm your Solution?

Solution:

The skin becomes loose for the older persons as the fat below becomes less with age and the vessels passing through these areas especially on the outside of the hands become prominent. These are veins as they flow superficially. The veins are thin and less muscular. These carry the blood to the heart veins are placed superficially, so they are easily visible and are prominent.

The blood in the veins will be carrying CO_2 and will have many substances like sugar, Amino acids, chemical and bacteria.

