



Class - VII Science October Month Notes

11. Circulation and Excretion

**Technical Words:**

1. haemoglobin - The red coloured iron-containing pigment present in the RBCs that help to
2. plasma - The straw-coloured fluid part of the blood in which the blood cells float
3. Atria/auricles the two upper chambers of the heart
4. Ventricles - the two lower chambers of the heart
5. Transpiration -The process by which plants lose water in the form of vapour, Mainly through the leaves
6. Translocation -The process by which prepared food is passed from the leaves to the different parts of the plant through phloem tissue
7. Nephrons - The functional units of the kidneys that help to filter wastes from blood

**A. Answer the question.**

**Short answer question**

**1. What are the substances in our body that need to be transported?**

[Answer] Substances in our body that need to be transported are oxygen and carbon dioxide, nutrients, water and other waste products.

**2. Differentiate between the functions of RBC and WBC.**

[Answer] Difference between RBC and WBC

RBC	WBC
RBCs contain haemoglobin that transports oxygen to all the cells in the body.	WBCs fight infection by destroying disease-causing microorganisms and harmful foreign substances entering into the body.

**3. What is the need for blood circulation?**

[Answer] Blood circulation is necessary for the distribution of oxygen and nutrients to various parts of the body. It also helps remove waste products, such as carbon dioxide and urea.

**4. What is the function of the valves between the right atrium and the right ventricle?**

[Answer] The valves between the right atrium and the right ventricle prevent the backflow of blood from the ventricle back into the atrium when the ventricle contracts. They ensure that blood flows in one direction only.

**5. Differentiate between xylem and phloem tissues.**

[Answer] Difference between xylem and phloem tissues.

Xylem	Phloem
Xylem transports water and minerals by forming continuous, pipe-like columns from the roots to the leaves.	Phloem tubes transport the prepared food from the leaves to every cell of the plant.
Movement of water through xylem is in the upward direction only.	Movement of food through phloem is both upwards and downwards.

**6. Define transpiration. How does it happen?**

[Answer] Transpiration is the process by which plants lose excess water as vapour through small openings called stomata in their leaves. Transpiration creates a suction force, which helps to pull more water from the roots in an upward direction. Transpiration occurs continuously throughout the day. Transpiration helps in the uptake of water and nutrients from the soil and in cooling the plant.

**7. Explain the different ways by which plants excrete.**

[Answer] Plants excrete waste products through following ways. (i) Carbon dioxide produced as a result of respiration, and oxygen, a by-product of photosynthesis, are sent out through the stomata. (ii) Excess water is eliminated through the stomata by the process of transpiration. Excess xylem sap is sometimes excreted from the tips of leaves and stems. (iii) Some waste is also released in the form of gums, latex, resins, and saps. (iv) Some accumulated waste products in the leaves and bark of trees are thrown out by shedding these parts.

### Long answer question

1. State the differences between arteries, veins and capillaries.

[Answer] Difference between arteries, veins and capillaries.

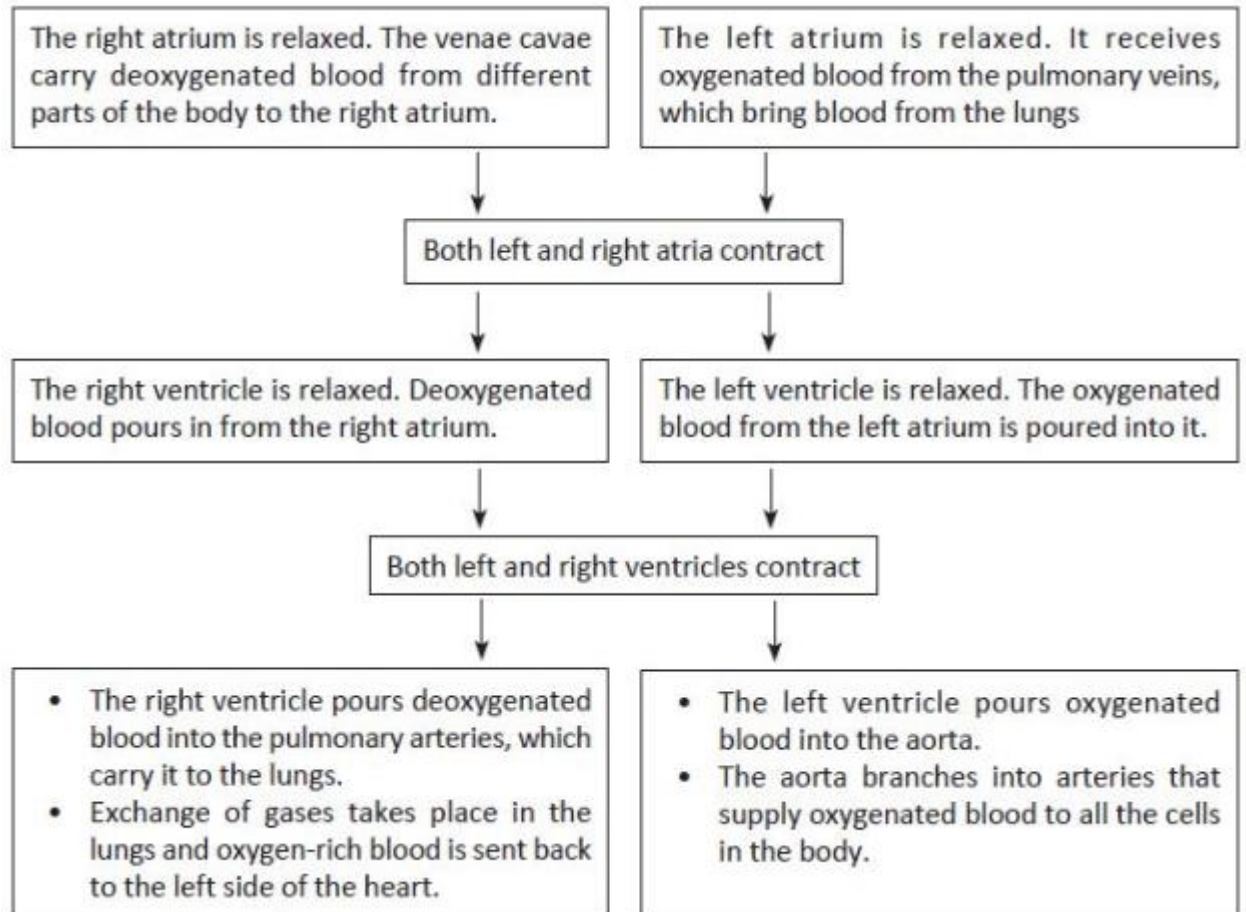
Arteries	Veins	Capillaries
They carry oxygenated blood (oxygen-rich) away from the heart to the body tissues (exception pulmonary artery).	They carry deoxygenated blood (oxygen-poor/carbon dioxide-rich) from the body tissues back to the heart (exception pulmonary vein).	They facilitate the exchange of nutrients, oxygen, and waste products between the blood and body tissues.
They have thick, elastic, muscular walls to withstand the high pressure generated by the heart's pumping action; do not have valves.	They have thinner walls as compared to arteries because most of the pressure is lost; contain one-way valves to prevent backflow.	One-cell thick wall (very thin) that allows diffusion of substances Do not have valves
Located deep inside our body	Located close to skin	Create networks around the tissues

2. Draw a diagram of the human heart and label the different components.

[Answer] Diagram: Refer to the textbook.

3. With the help of a flow chart, show how the human heart works.

[Answer] Flow chart to show the working of human heart.



**4. With the help of labelled images, explain different types of circulation in plants.**

[Answer] The different types of circulation in plants are as follow:

The roots of a plant absorb water and minerals from the soil and these are transported to the leaves. The leaves prepare food, which is transported to all parts of the plant's body.

Transportation in most plants is carried out by specialised tissues called vascular tissues. Xylem and phloem are the two kinds of vascular tissue in plants. The root hairs on roots absorb water from the soil by a process called osmosis. This is transported to the leaves by the xylem, which forms continuous, pipe-like columns from the roots to the leaves. The food prepared by the leaves is transported to every part of the plant by the phloem. This process is called translocation. (Diagram: Refer to the textbook.)

**5. What is excretion? Draw a labelled diagram of human excretory system and explain the functions of its different components.**

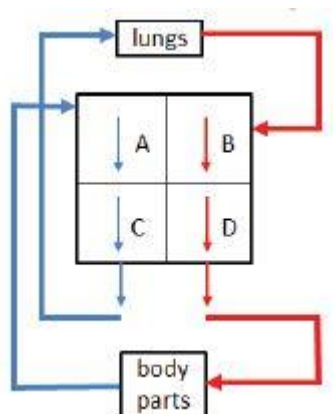
[Answer] The process by which waste is thrown out of a living organism's body is called excretion. (Diagram: Refer to the textbook.)

Following are the parts of the human excretory system and their function:

- (i) Kidneys: They help to eliminate nitrogenous wastes, excess water and salts from the body in the form of urine.
- (ii) Ureters: They are narrow tubes that carry urine from the kidneys to the urinary bladder for temporary storage.
- (iii) Urinary bladder: It is a muscular sac that stores urine until it can be expelled from the body.
- (iv) Urethra: It is a tube that helps to remove urine from the bladder.

(1 marks)

1.



a. Name A, B, C and D.

c. Where does the blood go right after D?

[Answer] a. A: right atrium; B:left atrium; C: right ventricle; D: left ventricle

b. deoxygenated blood

c. aorta d. pulmonary artery

### Assertion and Reasoning type questions:

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A.

(c) A is true but R is false.

(d) A is false but R is true.

1.) Assertion- there are two types of cells are the RBC and WBC.

Reason- RBC contain a red pigment haemoglobin and WBC fight against germs which enter our body.

Ans - d)

2.Assertion- the doctor feels the heart beats with the help of an instruments stethoscope.

Reason- a stethoscope is used to amplify the sound of heart .

Ans - a)

### Assertion and Reasoning type questions:

The question below consists of an Assertion and a Reason. Use the following key to choose the appropriate answer.

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

1) Assertion- There are two main types of cells in the human body: Red Blood Cells (RBCs) and White Blood Cells (WBCs).

Reason- RBC contain a red pigment haemoglobin and WBC fight against germs which enter our body.

Ans - d)

2.) Assertion- there are two types of blood vessels arteries and veins are present in the body.

Reason- Arteries carry deoxygenated blood from the heart to all parts of the body.

Ans - C)