

Class 7 Science
Chapter 10 Transport of Substance in Animals and Plants
Short Questions and answer

I. Very short answer type questions

Give two examples for the following.

1. Organisms that do not require any special transport system inside them

Ans: Amoeba, Paramecium

2. Wastes formed inside the human body

Ans: Urea, Carbon dioxide

3. Animals that have tubular structures to help them excrete wastes

Ans: Earthworms, Insects

4. Toxic wastes of plants

Ans: Resins, Latex

5. Things manufactured using plant secretions

Ans: Gum, Latex products (like rubber)

III. Short Answer Type Questions

1. How do substances get transported in hydra?

Ans: In hydra, substances like oxygen, nutrients, and wastes are transported from cell to cell by diffusion because it is a simple organism with only two layers of cells.

2. What is blood? Describe what blood is made up of.

Ans: Blood is a fluid connective tissue that transports nutrients, oxygen, and waste in the body. It consists of:

- a) Plasma (the liquid part),
- b) Red blood cells (RBCs) – carry oxygen,
- c) White blood cells (WBCs) – fight infections,
- d) Platelets – help in clotting.

3. Define the following:

- a. **Translocation** – The process of transport of food from the leaves to other parts of the plant.
- b. **Excretion** – The process of removal of metabolic wastes like urea, carbon dioxide, etc., from the body.

4. How do plants get rid of toxic wastes produced in them?

Ans: Plants remove wastes by:

- a) Storing them in cell vacuoles,
- b) Shedding old leaves,
- c) Releasing them as gums, resins, or through stomata in gaseous form.

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Long Questions and answer

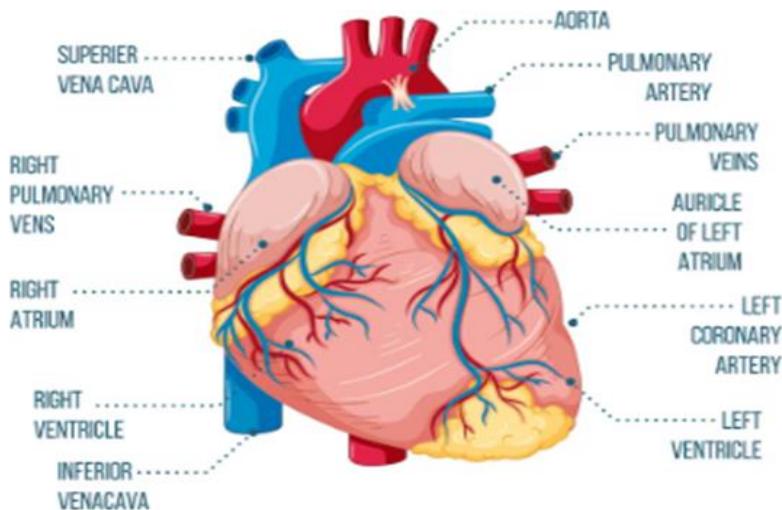
IV. Long Answer Type Questions

1. Explain the main differences between arteries, veins, and capillaries.

Feature	Arteries	Veins	Capillaries
Direction	Carry blood away from the heart	Carry blood toward the heart	Connect arteries and veins
Blood carried	Mostly oxygenated (except pulmonary)	Mostly deoxygenated (except pulmonary)	Both, for exchange of gases
Wall thickness	Thick and elastic	Thin walls with valves	Very thin (one cell thick)
Pressure	High pressure	Low pressure	Moderate pressure

2. Describe how the heart acts as the pumping station of the body.

Ans: The human heart is a muscular organ with four chambers – two auricles (upper) and two ventricles (lower).



The human heart circulates blood through two main loops: pulmonary and systemic circulation. The step-by-step path is:

a) **From the Body to the Heart:**

Deoxygenated blood from the body enters the **right atrium** through the superior and inferior vena cava. It then flows into the **right ventricle**.

b) **From the Heart to the Lungs (Pulmonary Circulation):**

The right ventricle pumps the deoxygenated blood to the **lungs** through the **pulmonary artery**, where carbon dioxide is removed and oxygen is absorbed.

c) **From the Lungs to the Heart:**

Oxygenated blood returns from the lungs via **pulmonary veins** into the **left atrium**, then into the **left ventricle**.

d) **From the Heart to the Body (Systemic Circulation):**

The **left ventricle** pumps oxygen-rich blood to the entire **body** through the **aorta**. Body cells use the oxygen, and the deoxygenated blood returns to the heart — completing the cycle.

3. What is transpiration? Discuss the role that transpiration plays in a plant and the factors that affect the rate of transpiration.

Ans: **Transpiration** is the process by which water is lost in the form of **water vapour** from the **aerial parts of a plant**, mainly through the **stomata** of the leaves.

Role of Transpiration in Plants:

- a) **Cooling effect:** Transpiration cools the plant by releasing water vapour, especially in hot weather.
- b) **Water movement:** It helps in pulling water and dissolved minerals from the roots to the leaves through the xylem (transpiration pull).
- c) **Maintains water balance:** It regulates the water content in plant tissues.
- d) **Mineral transport:** It aids in the upward movement of essential minerals from the soil.

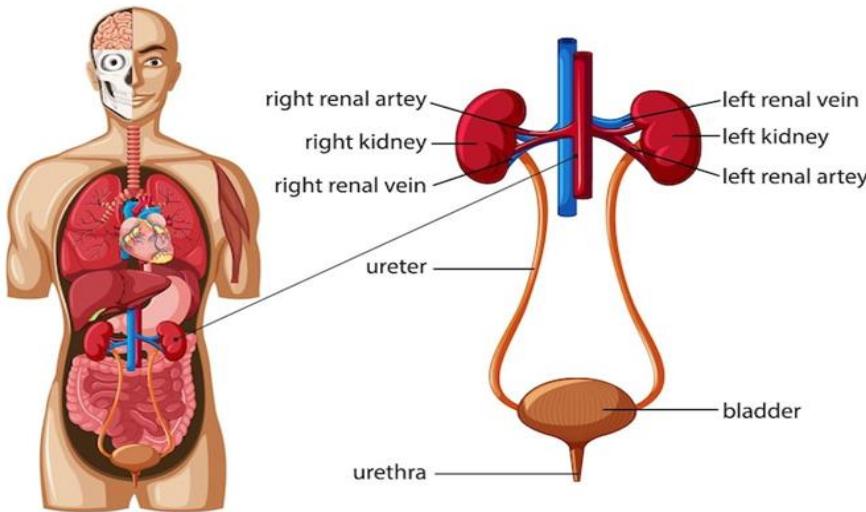
Factors Affecting the Rate of Transpiration:

- a) **Temperature:** Higher temperatures increase transpiration.
- b) **Humidity:** Low humidity increases the rate, while high humidity slows it down.
- c) **Wind:** Fast-moving air carries away water vapour, increasing transpiration.
- d) **Light:** More light increases stomata opening, which raises the rate of transpiration.
- e) **Type and number of stomata:** More stomata or open stomata lead to more transpiration.

4. With the help of a well labelled diagram, describe the human excretory system.

Ans: The **human excretory system** is responsible for removing waste materials (especially nitrogenous waste like urea) from the body. The main organs involved in this system are:

Human Kidneys and Bladder



Main Parts of the Human Excretory System:

- a) **Kidneys** – Bean-shaped organs that filter blood to remove waste and extra water, forming urine.
- b) **Ureters** – Thin muscular tubes that carry urine from the kidneys to the urinary bladder.
- c) **Urinary Bladder** – A sac-like organ where urine is stored temporarily.
- d) **Urethra** – A tube through which urine is excreted out of the body.

Functions of Excretory Organs:

- a) **Kidneys:** Filter blood, remove urea, excess salts, and water.
- b) **Ureters:** Transport urine from kidneys to the bladder.
- c) **Bladder:** Stores urine until it is excreted.
- d) **Urethra:** Excretes urine outside the body.