

CHAPTER 7

TRANSPORTATION IN ANIMALS AND PLANTS

2-mark questions:

1.What will happen if there are no platelets in the blood?

Answer:

If there are no platelets, then blood will not clot as platelets release blood clotting factor at the site of injury and stop further bleeding.

2. What are stomata? Give two functions of stomata.

Answer:

Tiny pores present on the leaf surface are known as stomata.

Functions of stomata

- It helps in the exchange of gases
- Evaporation of water through leaves occurs due to stomata.

3. Does transpiration serve any useful function in plants? Explain.

Answer:

Transpiration serves the following functions in plants

- It helps in lowering the temperature of plants, thus preventing heat injury to plants.

- It helps in transpiration pull, which helps in raining water on higher plants.
- It also causes loss of water absorbed by plants.

4. What are the components of blood?

Answer:

The components of blood are red blood cells, white blood cells, platelets and plasma.

5. Why is blood needed by all the parts of a body?

Answer:

Blood is a significant part of the transport system in our body, and we need blood for the following reasons:

- For the transport of oxygen to all parts of our body
- To expel carbon dioxide from our body
- To transmit heat, thus helping in the regulation of body temperature.
- It is required to fight out infections and diseases.

6. What makes the blood look red?

Answer:

The presence of a red pigment called hemoglobin in red blood cells (RBC) makes the blood appear red.

7. Why is it necessary to excrete waste products?

Answer:

When the cells in the body perform their functions, certain waste products are released. These are toxic and hence need to be removed from the body.

8. What is the main function of hemoglobin in the blood?

Answer:

Hemoglobin in the blood binds with oxygen and transports it to all parts of the body and ultimately to all the cells. This process is essential for providing oxygen efficiently to cells.

9. What are the two types of blood vessels in the circulatory system, and what is their primary function?

Answer:

The two types of blood vessels in the circulatory system are arteries and veins. Arteries carry oxygen-rich blood from the heart to all parts of the body, while veins carry carbon dioxide-rich blood from all parts of the body back to the heart.

5-mark questions:**4. Why is the transport of materials necessary in a plant or in an animal? Explain.****Answer:**

Transport of materials is necessary for both plants and animals as every cell needs a regular supply of nutrients and oxygen to release energy through respiration.

The food that we eat is broken down into smaller components to be absorbed by cells. The oxygen we inhale also has to be transported to all the cells of the body. Our body also requires the constant removal of waste materials such as carbon dioxide.

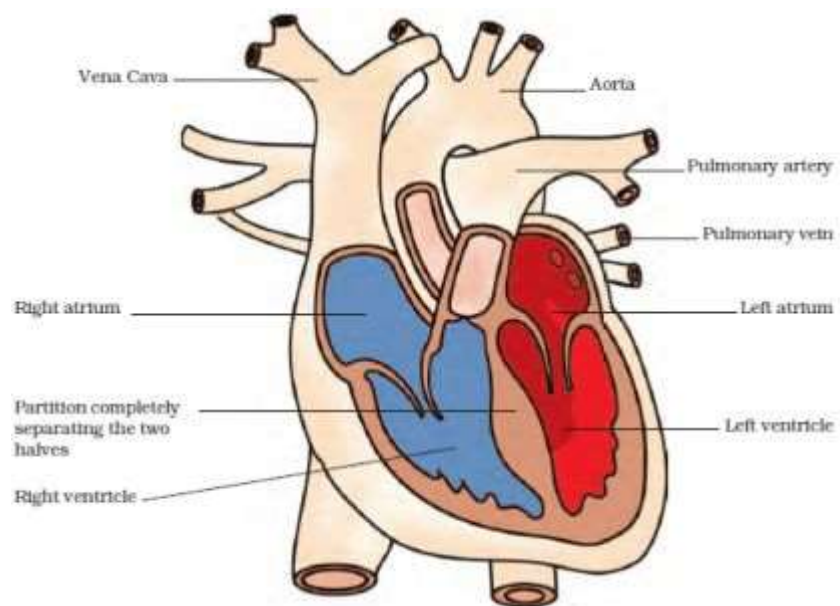
For the transport of all these materials (nutrients, oxygen and waste products), our body has a specialized transport system.

Similarly, in plants, the transport of water and food is accomplished with the help of vascular tissues (xylem and the phloem).

11. Describe the function of the heart.

Answer:

The heart is an organ which beats continuously to act as a pump for the transport of blood, which carries other substances with it. The heart has four chambers. The two upper chambers are called the atria (singular: atrium), and the two lower chambers are called the ventricles. The partition between the chambers helps to avoid mixing up blood-rich in oxygen with the blood-rich in carbon dioxide. Blood flows from the heart to the lungs and back to the heart, from where it is pumped to the rest of the body.



13. Draw a diagram of the human excretory system and label the various parts.

Answer:

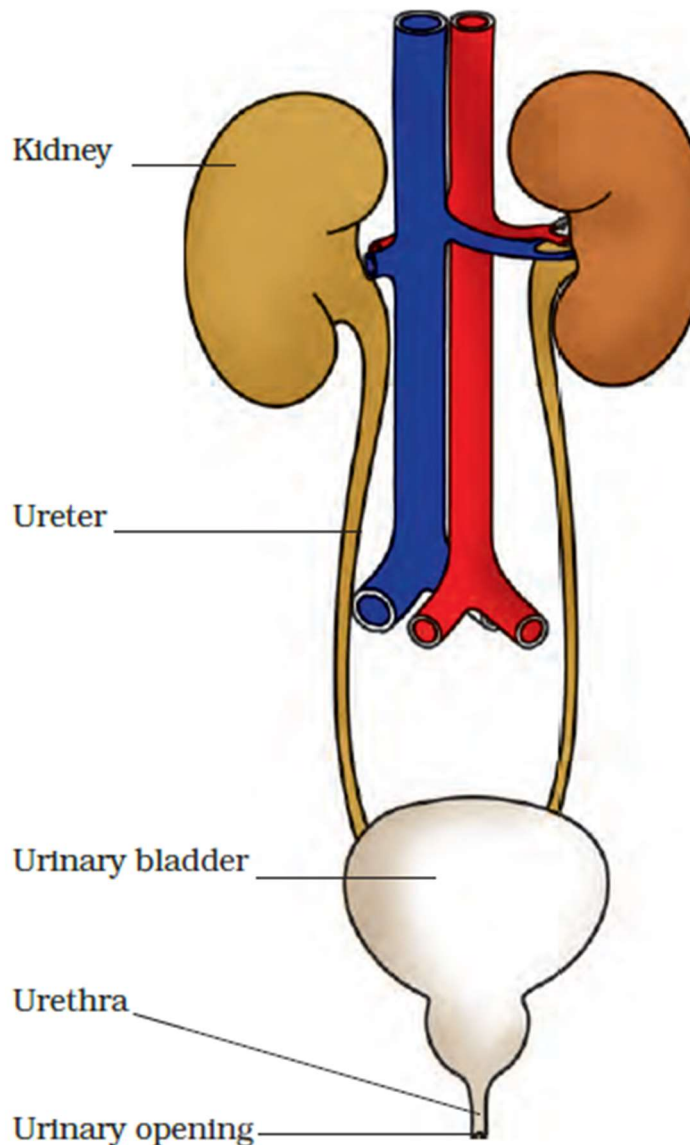


Fig. 11.6 Human excretory system

1. Match structures given in Column I with functions given in Column II.

Column- I	Column-II
(I) Stomata	(a) Absorption of water
(ii) Xylem	(b) Transpiration
(iii) Root hairs	(c) Transport of food
(iv) Phloem	(d) Transport of water
	(e) Synthesis of carbohydrates

Answer:

Column- I	Column-II
(I) Stomata	(b) Transpiration
(ii) Xylem	(d) Transport of water
(iii) Root hairs	(a) Absorption of water
(iv) Phloem	(c) Transport of food

2. Fill in the blanks.

(i) The blood from the heart is transported to all parts of the body by the _____.

(ii) Hemoglobin is present in _____ cells.

(iii) Arteries and veins are joined by a network of _____.

(iv) The rhythmic expansion and contraction of the heart is called the _____.

(v) The main excretory product in human beings is _____.

(vi) Sweat contains water and _____.

(vii) Kidneys eliminate the waste materials in the liquid form called _____.

(viii) Water reaches great heights in the trees because of suction pull caused by _____.

Answer:

(i) The blood from the heart is transported to all parts of the body by the **arteries**.

(ii) Hemoglobin is present in **red blood** cells.

(iii) Arteries and veins are joined by a network of **capillaries**.

(iv) The rhythmic expansion and contraction of the heart is called the **heartbeat**.

(v) The main excretory product in human beings is **urea**.

(vi) Sweat contains water and **salts**.

(vii) Kidneys eliminate the waste materials in the liquid form called **urine**.

(viii) Water reaches great heights in the trees because of suction pull caused by **transpiration**.

3. Choose the correct option:

(a) In plants, water is transported through

(i) xylem

(ii) phloem

(iii) stomata

(iv) root hair

(b) Water absorption through roots can be increased by keeping the plants

(i) in the shade

(ii) in dim light

(iii) under the fan

(iv) covered with a polythene bag

Solution:

a) i) xylem

b) iii) under the fan

Summary:

In this chapter, we explored the fascinating world of transportation in animals and plants. In animals, the circulatory system plays a vital role, consisting of the heart and blood vessels. Blood, composed of plasma, red and white blood cells, and platelets, circulates through arteries and veins, carrying oxygen, nutrients, and removing waste. The heart beats continuously, maintaining circulation.

We delved into the human excretory system, where kidneys filter waste from the blood, leading to the formation of urine. The importance of sweat in eliminating salts and urea was highlighted. Additionally, various animals exhibit different excretory mechanisms based on their habitat.

Shifting focus to plants, we explored how water and minerals are transported through xylem vessels, and food through phloem. Transpiration, the release of water vapor from leaves, contributes to this process and aids in cooling the plant. The chapter offered a comprehensive understanding of how living organisms ensure the efficient transport of essential substances for survival.