

**PARAGON CONVENT SCHOOL, CHANDIGARH**  
**CH-11**

**TRANSPORTATION IN ANIMALS AND PLANTS**

**Summary:**

- Circulatory system of human beings consists of blood, blood vessels and heart.
- Blood consists of two components: fluid components- blood plasma, solid component: blood cells(red blood cells, white blood cells and platelets)
- There are three types of blood vessels- arteries, veins and capillaries.
- Heart pumps the blood to all parts of the body through blood vessels.
- The organs that are involved in the excretion in humans are large intestine, lungs, skin and kidneys.
- Excretory system in humans consists of the following organs: kidneys, ureters, urinary bladder and urethra.
- Transport system of plants is called as vascular system consisting of xylem and phloem.

**MCQs page no- 146**

1. B
2. C
3. C
4. A
5. C

**MCQs page no- 151**

1. B
2. C
3. A

4. D

5. C

## **SECTION - A**

### **A. Oral questions.**

1. 72-80 beats/minute.
2. Waste materials produced in our body are toxic and may cause health hazards. Thus it is necessary to excrete waste materials from the body.
3. Plants need a transport system to transport water and Minerals absorbed by the roots up to the leaves and food prepared by the leaves to all parts of the plant.
4. The upward movement of water and Minerals in a plant through xylem is called ascent of sap.

### **B. Science quiz.**

1. (a) Amoeba: Body surface  
(b) Earthworm : Nephredia  
(C) Cockroaches: malpighian tubules  
(d) Vertebrates: Kidneys
2. Vascular system
3. Excretion
4. Arteries

## WORKSHEET

### A. Tick the correct options.

1. C
2. D
3. D
4. B

### B. Circle the odd one out.

1. Capillaries: are the blood vessels where as others are components of blood.
2. Oxygen: is a component of fresh air where as others are excretory products.
3. Liver: is an organ of digestive system where as others are organs of excretory system.
4. Pancreas: is a digestive gland where as others are organs involved in excretion of wastes.

### C. Fill ups.

1. Platelets
2. Heart rate
3. Stethoscope
4. Nephron

## SECTION - B

### A. MCQs.

1. A
2. B
3. B

### B. Very short answer questions.

1. What is the function of septum in the heart?

Septum prevents the mixing of oxygenated blood with the deoxygenated blood in the heart.

2. Name the waste products excreted by a) large intestine b) lungs c) skin

(a) undigested food                      (b) carbon di-oxide

(c) excess water, urea, some salts and other metabolic wastes in the form of sweat.

3. Name two types of vascular tissues present in plants.

Xylem and phloem.

4. What is the size of human heart?

Human heart is roughly equal to the size of our fist, about 12cm in length and 9cm in breadth.

### C. Short answer type-I questions.

1. Explain why the heart beats faster during and after physical exercise.

The heart beats faster during and after a physical exercise so as to supply more oxygen because at such times the body cells need more oxygen to release more energy through respiration.

2. What is meant by excretion?

The process of removal of waste products produced in the cells of the living organisms is called excretion.

3. What is dialysis? What type of patients are put on dialysis machine?

The process of cleaning the blood of a person with the Kidney failure by separating the toxic waste or excretory products using a Dialysis machine is called dialysis. A person who suffers from kidney failure is put on dialysis to remove the waste products from the blood.

4. What is blood? What are its two components?

Blood is a red coloured fluid which flows in the blood vessels to every part of the body. The components of blood are

(a) Fluid component: blood plasma

(b) Solid component : blood cells WBCS RBC is and platelets

5. Which part of the heart:

(a) Receives blood from the lungs

Left Atrium

(b) pumps blood to the lungs

right ventricle

(c) pumps blood into the body organs.(except lungs)

left ventricle

(d) receives blood from the body parts(except lungs)

right Atrium

#### **D. Short answer type-II questions.**

##### **1. Give reason for the following.**

(a) Arteries have thick and elastic muscular walls.

Arteries have thick and Elastic muscular walls because the blood flow is rapid and at high speed in the arteries.

(b) Arteries are not easily seen.

Arteries are not easily seen because they lie quite deep under the skin.

(c). Veins have thin and less elastic muscular walls.

Veins have thin and less elastic muscular walls because the blood flow is slow and at low pressure in veins.

2. How does transpiration help in the transport of water and minerals in the plants?

Transpiration help in transportation of water and minerals by producing suction pull which pulls the water from roots to great heights in tall trees.

3. Write the differences between arteries and veins.

<u>Sr.no</u>	<u>PARAMETERS</u>	<u>ARTERIES</u>	<u>VEINS</u>
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1.	Direction of blood flow	Carry blood from heart to various body parts	Carry blood from different body parts to the heart.
2.	Nature of blood	Carry oxygen rich blood(except pulmonary artery)	Carry carbon dioxide rich blood (except pulmonary vein)
3.	Flow of blood	Blood flows at a high speed and at a high pressure.	Blood flows at a low pressure and at a low speed.
4.	Walls	Walls are thick and elastic.	Walls are thin and less elastic.
5.	Valves	Valves are absent.	Valves are present.
6.	Position in the body	Arteries are deeply seated.	Veins are not deeply seated.

4.what are the functions performed by sweating in human beings?

The functions performed by sweating in human beings are:-

(i) Sweating helps in removing excess water, some salts and urea are liquid wastes from the body.

(ii)Sweating helps in keeping the body cool during summers.

### **E. HOTS questions.**

1. What will happen if blood does not have enough platelets?

If the blood does not have enough platelets in blood clotting will get affected.

2. Why is the heart divided into two halves by a thick wall?

The heart is divided into two equal halves to segregate the oxygenated blood from the deoxygenated blood and avoid their mixing.

3. Xylem transports sap upwards only whereas phloem transports food in both the directions. Why do you think there is a difference?  
Xylem can only conduct water from the soil and transported to all parts of the plant in upward direction. Phloem translocates the food from leaves to all parts of the plant for utilisation as well as storage. It supplies food to the aerial parts as well as the roots in both directions.

4. WBCs are often called soldiers of the body. Why?  
The main function of WBCS is to fight against germs that enter our body and protect us from diseases. That is why they are often called soldiers of the body.

#### **F. Practical skill based questions.**

1. After girdling of the stem, the portion of the plant below the girdled stem dries. Why does this happen? What does this prove?  
The portion of the plant below the girdled stems dries because phloem gets removed due to girdling. The lower part does not get food prepared by the leaves and thus dries up. This proves that food is translocated by the phloem.

**List of diagrams.**



1. Fig11.4 exchange of materials in blood capillaries.
2. Fig11.6 internal structure of human heart.
3. Fig11.7 schematic diagram of blood circulation in human body.
4. Fig.11.11 the human excretory system.
5. Fig11.14 transpiration produces suction pull which causes ascent of sap.