INDIAN SCHOOL AL WADI AL KABIR		
Class: VII	**Department: SCIENCE 2023-2024**	**Date:14/12/2023**
Worksheet No:14 **WITH ANSWERS**	**TOPIC: TRANSPORTATION IN ANIMALS AND PLANTS**	**Note:A4 File format**
Name of the student:	**Class & Section:**	**Roll no.**

I. OBJECTIVE TYPE QUESTIONS:

1. The fluid part of the blood is called-

a) Plasma b) RBC

c) WBC d) Platelets

2. Blood platelets help in

a) Formation of urine b) Excretion of urine

c) Involved in blood clotting d) All of these

3. The oxygen-carrying component is called-

a) RBC b) WBC

c) Blood Plasma d) Blood Platelets

4. Water-carrying tissue in plants is called –

a) Xylem b) Phloem

c) Veins d) Roots

5. The red pigment present in the RBC of the blood is

a) haemoglobin b) WBC

c) pulse d) none of these

6. Select the type of cells, present in blood, whose main function is to fight against diseases by destroying harmful bacteria and other foreign material.

a) RBC **b) WBC**

c) Platelets d) Plasma

For the questions that follow, two statements are given: - one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below:

i) Both A and R are true and R is the correct explanation of the assertion.
ii) Both A and R are true but R is not the correct explanation of the assertion.
iii) A is true but R is false.

iv) A is false but R is true

7. **Assertion(A):** RBC is red.

Reason(R): A red-coloured pigment called haemoglobin is present in RBC

Ans: (i) Both A and R are true and R is the correct explanation of the assertion.

8**. Assertion(A):** Arteries always carry oxygen-rich blood away from the heart.
Reason(R): The pulmonary artery carries deoxygenated blood away from the heart to the lungs for purification hence it is called an artery and not a vein.

Ans: (i) Both A and R are true and R is not the correct explanation of the assertion.

9. **Assertion(A):** Several droplets of water are seen on the margins of the leaves of roses in the morning.
Reason(R): We give water to the rose plants and some waterfalls on the leaves.
Ans: ii) Both A and R are true but R is not the correct explanation of the assertion.

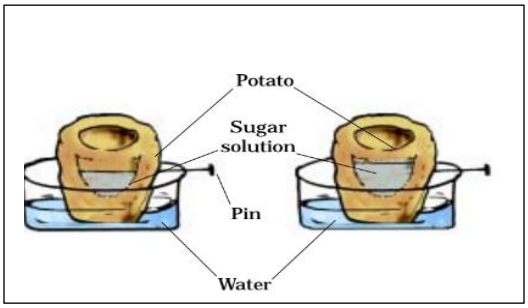
10**. Assertion (A):** The excretory system of humans consists of two kidneys, two ureters, a urinary bladder and urethra.
Reason (R): The useful substances are not absorbed back into the blood and are removed as urine.
Ans: (iii) A is true but R is false.

II. VERY SHORT ANSWER TYPE QUESTIONS (2M):

1. What is meant by heartbeat? What is the normal range of heartbeat of a human body**? [Hint: The rhythmic contraction and relaxation of muscles in the heart constitute a heartbeat. The normal range of heartbeat in an adult person is 70 to 80 times per minute.]**
2. Name the tissues present in the vascular system**. [Hint: xylem and phloem]**
3. (a) Define the term excretion**.[Hint: The process of removal of wastes produced in the cells of living organisms is called excretion.]**
   (b) How do the following animals excrete their cell waste?
   [Fishes- **Fishes excrete cell waste as ammonia which directly dissolves in water.**
   Birds and lizards- **Birds, lizards and snakes excrete a semi-solid, white-coloured compound (uric acid).**
4. (a) State the function of sweat**. [Hint: Excess of water, urea and salts are excreted through the sweat glands present in the skin. It also helps in cooling our body.]**
   (b) We feel cool while sweating. Give reason**.[Hint: Sweating is a process where excess water, urea and salts are expelled or removed. The sweat evaporates from our skin, it takes up our body heat and this makes us feel cool, especially during the summer days.]**
5. What is meant by transpiration and mention the importance of transpiration? **[Hint: Transpiration is the process by which plants lose water in the form of water vapour through stomata present on the surface of the leaves. This process generates a suction pull which can pull water to great heights in the tall trees. It also helps in cooling the plant body.]**
6. State the function of valves present in veins**.[Hint: Valves allow the flow of blood in one direction only, that is, from the atrium to the ventricles and not back into the atrium .]**

7. Skin is also considered as an excretory organ. Give reason.**[Hint: Skin is an excretory organ as it helps in eliminating wastes from our body. Excess of water, urea and salts are excreted in the form of sweat through our skin.]**
8. What are stomata? Give two functions of stomata.**[Hint: Tiny pores present on the leaf surface are known as stomata. Functions of stomata: Helps in the exchange of gases, evaporation of water takes place through stomata.]**
9. (a) What is a tissue**? [Hint: A group of similar cells which work together to perform a particular function.]**
   (b) What are vascular tissues**?[Hint: Those tissues which transport water, minerals and food to different parts of a plant are called vascular tissues .]**

10. Observe the figure given below and answer the questions given.



(a) What will be your observation after a few hours?

[Hint: We will find an increase in the level of sugar solution]

(b) How did water get inside the potato?

[Hint: For a very short distance water can move from one cell to another.]

(c) How can you relate this activity with the transportation of substances in plants?

[Hint: In the same way water reaches xylem vessels of the root from the soil.]

III. SHORT ANSWER TYPE QUESTIONS (3M):

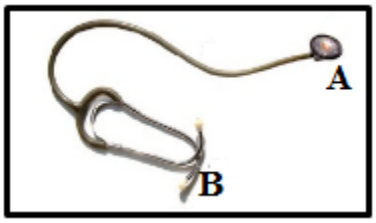
1. a) Write down any two functions of blood. **[Hint: Transports substances like digested food to other parts of the body, carries oxygen from the lungs to cells of the body]**
   (b) Mention the functions of the following blood cells.
   - RBC- **Oxygen binds with haemoglobin present in RBC and is transported to all parts of the body.**
   - WBC- **WBC fights against the germs that may enter the body.**
   - Platelets-**Platelets help in clotting of blood.**

2. What is the special feature present in the human heart which does not allow the mixing of blood when oxygen-rich blood and carbon dioxide-rich blood reach the heart**? [Hint: The heart has four chambers. Two upper chambers are called atria and two lower chambers are called ventricles. The partition which is called the septum between the chambers helps to avoid the mixing of oxygen-rich blood with carbon dioxide-rich blood.]**
3. Sponges and Hydra do not possess any circulatory system then how do they carry out the distribution of food and other substances**? [Hint: The water in which these organisms live**

brings them food and oxygen as it enters their bodies. The water carries away waste materials and carbon dioxide as it moves out.]

4. Explain the role of the xylem and phloem in the transportation of water and minerals in plants**. [Hint: Xylem transports water and minerals, Phloem transports food to all parts of the plant.]**

5. Observe the following figure and answer the given questions:



a) Name the instrument. **[stethoscope]**

b) Label the parts A and B**.[A-Chest Piece-Ear piece]**

c) What is the role of this instrument? **[Hint: Doctors listen to the sound of the heartbeat. It helps in amplifying the sound of the heartbeat when it is placed on the chest near our heart and doctors get clues about the condition of the heart.]**

6. Explain how water is absorbed by roots from the soil**. [Hint: Roots have root hairs which increase the surface area of the root for the absorption of water and mineral nutrients dissolved in water.]**

7. a) Name the only artery that carries carbon dioxide-rich blood. Why is it called an artery if it does not carry oxygen-rich blood? **[Hint: The pulmonary artery carries deoxygenated blood from the right ventricle to the lungs. Arteries carry blood away from the heart, blood flows under high pressure, has thick walls and does not contain valves and the pulmonary artery carries deoxygenated blood from the heart to the lungs for oxygenation.]**

(b) What is the significance of dividing the heart into different chambers?

[Hint: The division of the heart into different chambers ensures that there is no intermixing of oxygen-rich blood and carbon dioxide-rich blood. This ensures a better efficiency of circulation and transportation of oxygen.]

(c) Differentiate between pulmonary artery and pulmonary vein.

[Hint: The pulmonary artery carries deoxygenated blood from the right ventricle to the lungs. It is called an artery because it carries blood away from the heart.

The pulmonary vein carries oxygenated blood from the lungs to the heart (left atrium). It is called a vein because it carries blood back to the heart .]

IV. LONG ANSWER TYPE QUESTIONS. (5M)

1. Priya's grandfather was taken to the hospital as he was unable to perform excretory processes. Priya heard a nurse telling her father that her grandfather had kidney failure and needed to undergo dialysis. Priya later asked her father what is dialysis process and why grandpa needed it. Her father smiles and tells her all the facts associated with this process.

a) What do you mean by dialysis? **[Hint: Dialysis is the process used for cleaning of the blood by separating the waste products in an artificial medium.]**

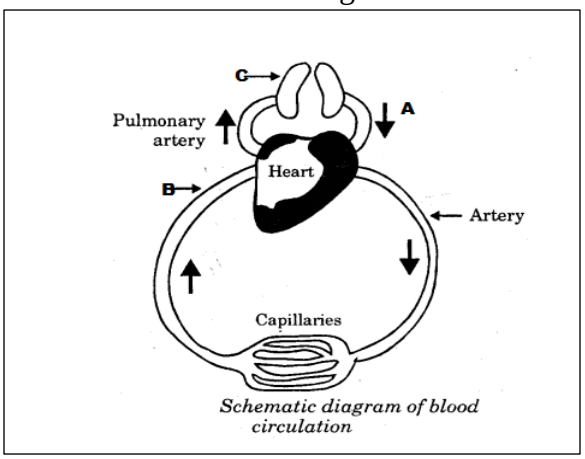
b) Why is there a need for dialysis in some people? **[Hint: Dialysis is needed when the excretory organ of humans, i.e. kidney becomes damaged or unfunctional due to some injury or infection.]**

c) Excretion is an important life process. How? **[Hint: The excretion process removes the waste**

products released in the body after the utilisation of food and other components. These products are toxic and may harm us if not removed from our bodies.]

d) Which is the major excretory organ in humans? **[Hint: Kidney]**

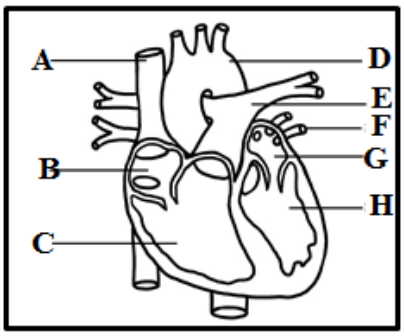
2. (a) Name the components of the circulatory system.
   [Hint: The components of the circulatory system are blood, blood vessels and the heart]
   (b) Label the parts shown in the below schematic diagram of blood circulation.



Schematic diagram of blood circulation

[Hint: A-Pulmonary vein B- Vein C- Lungs]

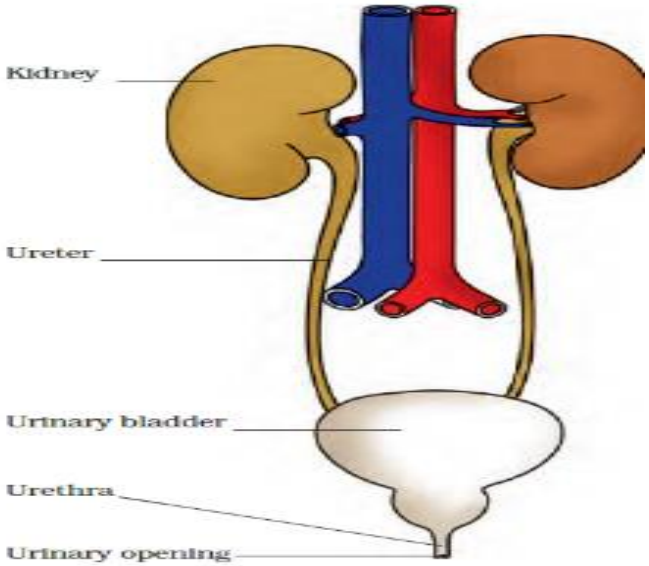
3. Label the given diagram and explain the path of blood circulation in the human body.



[Hint: A-vena cava, B- Right atrium, C- Right ventricle, D-aorta, E-Pulmonary artery, F-Pulmonary vein, G-left atrium, H-left ventricle

- **Function-The right atrium and ventricle receive blood rich in carbon dioxide from all parts of the body through vena cava.**
- **The collected blood is then pumped to the lungs for the purification through pulmonary artery.**
- **In the lungs, the exchange of gases takes place and purified blood is sent back to the left atrium through the pulmonary vein.**
- **It pumps it to the left ventricle, which in turn pumps off the purified blood to all parts of the body through the aorta.]**

4. Draw a neat labelled diagram of the urinary system and explain its various organs.



[Kidneys: There are two kidneys which are richly supplied with blood capillaries.
When the blood reaches the kidneys, it contains both useful and harmful substances.
The useful substances are absorbed back into the blood and the wastes dissolved in water are removed as urine.
Ureters: are two tube-like structures which connect the kidneys and the urinary bladder.
They allow the passage of urine from the kidney to the urinary bladder.
Urinary bladder:
The urine produced by the kidneys is stored in the urinary bladder temporarily.
Urethra: It is a small muscular tube which is connected on one side to the urinary bladder and on the other side it opens to the outside through a small opening which helps in passing out urine.

V. CASE STUDY- BASED QUESTIONS/ PASSAGE-BASED QUESTIONS-

Read the given passage and answer the following questions.

The circulatory system carries the blood from the heart to different parts of the body and brings it
back to the heart. The heart is an organ of the human body which acts as a pump to transport blood and other substances. There are four chambers where the upper two chambers are called the atria and the lower two chambers are called the ventricles. There is a partition between them which helps to avoid mixing up of blood containing oxygen and carbon dioxide. Blood flow occurs from the heart to the lungs and back to the heart from where it is supplied to all the parts of the body. The components of blood are – Red Blood Cells (RBC), White Blood Cells (WBC), Platelets and Plasma. Red blood cells have iron pigments known as haemoglobin that combine with oxygen and transport it to all parts of the body. The presence of haemoglobin gives red colour to blood. On average, there are five million RBCs per cubic mm of blood.
White blood cells, or WBCs, defend the body against infections. When a blood vessel is cut, blood comes out immediately. After some time, a dark red clot is formed on the cut.
This is formed by cells called platelets in the blood. When the platelet count decreases, excessive bleeding takes place and may even cause death.

i). Which blood cells contain haemoglobin?

[Hint: Red blood cells]

ii). Why the colour of blood is red?

[Hint: Due to the presence of red pigment haemoglobin]

iii). How many chambers are there in the human heart? Name the upper and lower chambers of the heart

[Hint: 4 Chambers, upper chambers-atria, lower chambers -ventricles]

iv) . Name the organ which pumps blood in the human body.

[Hint: Heart]

PREPARED BY Ms PREETI NAMBIAR	CHECKED BY HoD SCIENCE