

## Transportation and Excretion 7<sup>th</sup> Biology

William Harvey was an English physician who was the first to give the details of blood circulation, the properties of blood and the pumping of blood by the heart.

Q1. Why is color of blood red?

Ans. Blood has a Pigment known as hemoglobin that gives red color to it.

Q2. What does blood consist of?

Ans. Blood consists of Red blood cells, white blood cells, platelets and plasma.

Q3. What is removed along with water as sweat?

Ans. Extra salts are removed along with water as sweat.

Q4. What is the function of stethoscope?

Ans. Stethoscope is used by doctors to amplify heart beat so that it can be analyzed properly.

Q5. What do you mean by pulse and pulse rate?

Ans: When blood flows in arteries, it gives throbbing sensation in arteries. This throbbing sensation is known as a pulse. The rate of heart beat or throbbing is known as pulse rate. A person has a pulse rate between 72 to 80 beats per minute. A stethoscope is an instrument used to measure the sound heart beat.

Q6. Why is transport of materials necessary in a plant or in an animal?

Ans. All organisms need food, water and oxygen for survival. They need to transport all these to various parts of their body.

Q7. What are the functions of white blood cells?

Ans . White blood cells fight against the infection or germs in the body, thereby providing immunity.

Q8. How is clot formed?

Ans . Clot is produced as an action of platelets during any external injury to prevent excessive loss of blood.

Q9. What is the main function of heart?

Ans . Heart is the main pumping organ for blood to be circulated as blood is required to be sent to all the parts of the body so as carry on all the important functions of body.

Q10. Why is it necessary to excrete waste products?

Ans . During various activities which are performed within body, certain by products are produced.

Some of these products are toxic and are required to be thrown out.

Q11. What is transpiration? How is it useful to plants?

Ans. It is the process of removal of extra water in the form of water vapours through stomata in plants. This process helps in eliminating extra water and keeping plant cooler.

Q12. What is meant by excretion?

Ans. It is the process of removal of toxic substances from the body.

Q13. Why is blood needed by all the parts of the body?

Ans: oxygen and carbon dioxide from their respective sites, wastes material for excretion. These are to be transported to ensure proper functioning in the body.

Q14. Why do plants absorb a large quantity of water from the soil?

Ans. Plants remove lots of water by the process of transpiration. This is why plants require to absorb large quantity of water from the soil.

Q15. Differentiate between:

1. Arteries and veins

Ans:

Arteries	veins
They carry blood away from heart They carry blood towards heart	They carry blood away from heart They carry blood towards heart
They carry oxygenated blood except pulmonary artery	They carry deoxygenated blood except pulmonary vein
They are thick walled and deeply seated They are thin walled and superficially located beneath skin	They are thick walled and deeply seated They are thin walled and superficially located beneath skin
They lack valves	They have valves to prevent backflow of blood.

2. Atrium and Ventricle

Ans:

Atrium	Ventricle
They are the upper chambers of heart	They are the lower chambers of heart.
They receive blood from various body parts	They are thin walled They are thick walled

3. RBC and WBC

Ans:

RBC	WBC
They are red in colour	They are colourless
They have hemoglobin	They lack hemoglobin
They help in transport of gases	They help in fighting against germs and infection

4. Xylem and Phloem

Ans:

Xylem	Phloem
It transports water and minerals	It transports food
It has unidirectional movement.	It has multidirectional movement.

Q16. Why do sponges and hydra not have blood?

Ans. Animals such as sponges and hydra do not possess any circulatory system. The water in which they live brings food and oxygen as it enters their body, the water carries away waste materials and carbon dioxide as it moves out.

Q17. Why are valves present in veins?

Ans. Valves are present in veins to prevent back flow of blood in tissues.

Q18. Enlist the functions of blood.

Ans :

(i) It transports substances like digested food from the small intestine to the other parts.

(ii) It carries oxygen and carbon dioxide to their respective organs and tissues. It transports wastes for removal from the body.

Q19. Name the term for transport of food from leaves to other parts of plants.

Ans. Translocation

Q 20. Name the type of blood vessels which carry blood from organs to the heart.

Ans. Veins.

Q. 21. Why do the arteries have thick elastic walls?

Ans: When the blood is pumped by heart toward cells, it comes at very high pressure and to withstand that high pressure the arteries have thick and elastic walls.

Q.22: Describe the function of the heart.

Ans: 1. Heart is a triangular shaped organ. It is made up of cardiac muscles and is located between the lungs inside the chest cavity.

2. It beats 60 to 80 times per minute throughout life. It pumps blood to all parts of the body.

3. The heart has four chambers. The top chambers are called auricles (or atria) and the lower two chambers are called ventricles.

4. The left chambers are completely separated from the right side by a partition called septum. The chambers contain valves which allow the flow of blood in one direction only.

5. The right auricle receives carbon-dioxide rich blood from various parts of the body. The right ventricle pumps the blood to the lungs. Inside the lungs, carbon-dioxide is exchanged with oxygen.

6. The left auricle receives oxygen-rich blood from the lungs. The left ventricle pumps this blood to the rest of the body.

Q.23. What do we call the study of blood?

Ans: Hematology

Q.24. Sometime doctors inject medicines directly in our bloodstream. Where do they inject in artery or in vein?

Answer: In vein. Veins are superficial and are easily locatable. Second medicine needs to be transported to all parts of the body. Through veins, medicine reaches heart and then pumped to all over the body.

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Q25: What is heart beat? Name the instrument used to provide information about heart beats.

Ans: One complete contraction and relaxation of heart makes one heart beat. Electrocardiogram (ECG) is used to check rhythm of heart beats

Q. 26. Write the function of blood?

Ans: Blood consist of Blood cells floating in liquid called plasma. we have about 4.7 to 5.5l blood in our body.

#### Function of blood

- It carries oxygen from lungs to body cells
- It removes waste from cell
- It regulate body temperature
- it protect body against infections

Q.27. What is the different scientific name of Blood cells?

Ans: RBC – Erythrocytes- It is disc shape and having colour pigment Haemoglobin which provide red colour. It transport oxygen to all part of body

WBC – leukocytes – It produces antibodies that protect us from disease causing micro organism.

Platelets: Thrombocytes - It helps in clothing of blood

Q. 28.What is plasma. What are its functions?

Ans: Plasma contains 90% of water and rest are  $\text{CO}_2$ , hormone protein and glucose. it is yellow in colour. It removes  $\text{CO}_2$  from cells and transport to lungs. It also carries urea from body cells to kidney.

Q.29. Explain form and function of urinary system in man?

Ans: Urinary system consists of Kidney, The ureters, the urinary bladder and the urethra.

#### The Functions of the Urinary System:

The kidneys regulate blood volume and composition, help to regulate blood pressure and pH, participate in red blood cell production and synthesis of vitamin D, and excrete waste products and foreign substances. The Nephrons tubule is the functional unit of the kidney.

- The ureters transport urine from the kidneys to the urinary bladder.
- The urinary bladder stores urine and expels urine into the urethra,
- The urethra discharges urine from the body.

Q.30. What is dialysis? Explain.

Ans: Dialysis is the artificial process of getting rid of waste and unwanted water from the blood by dialysis machines.

Dialysis machines contain a tank with solution of water glucose and salt. Patient's blood allowed passing through solution for removal of waste. the cleaned blood pumped to vein. The dialysis continues till all blood has been purified.

Q.31. Write the two functions of kidneys.

Ans. Osmoregulation and excretion.

Q.32. How does osmoregulation control water and salt content of the body?

Ans: Water content is controlled by water loss from:

- the lungs when we exhale
- the skin by sweating
- the body, in urine produced by the kidneys

Salt content is controlled by loss of ions from:

- the skin by sweating
- the body, in urine produced by the kidneys

Q.33. Differentiate between osmoregulation and excretion

Ans: Excretion is the elimination of metabolic waste products from the body.

Osmoregulation is regulating osmotic pressure of the body fluids by controlling the amount of water and salts in the body

Q.34 Why is heart known as the pumping organ of the human body?

Ans Heart is the pumping organs of a human body as it continuously act as a pump for transporting blood to all body parts. Heart pumps carbon-dioxide rich blood to lungs and oxygen rich blood to rest of the body.

Q.35 What is the significance of dividing heart into different chambers?

Ans. The division of heart into different chambers ensures that there is no intermixing of oxygenated and deoxygenated blood. This ensures a better efficiency of circulation and transportation of oxygen.

Q. 36. What are the different kinds of valves?

Ans: Valves are found throughout the body and regulate the flow of blood, oxygen, and body fluids.

The four valves in the heart are:

\* The two atrioventricular (AV) valves, which are between the atria and the ventricles, are the mitral valve and the tricuspid valve.

\* The two semi lunar (SL) valves, which are in the arteries leaving the heart, are the aortic valve and the pulmonary valve.

Q.37. what is systolic pressure and diastolic pressure?

Ans: The force that blood exerts against the wall of a vessel is called blood pressure. The pressure measured in arteries during ventricular contraction is called **systolic pressure** and minimum pressure measured in artery during ventricular relaxation is called **diastolic pressure**. The normal BP is 120mmHg/80mmHg where 120 is systolic BP and 80 is diastolic BP.

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