Chapter 11. Transportation in Animals and Plants

Very Short Q&A:

Q1: Circulatory system consists of the heart, blood vessels and _____.

Ans: Blood.

Q2: Name the system in the body responsible for removal of unwanted harmful substances and excess water in the body cells.

Ans: Excretory system

Q3: Name the fluid part of blood

Ans: Plasma

Q4: Name the three types of cells present in blood.

Ans: White blood cell, red blood cell and platelets

Q5: Red blood cells, also called RBCs, have iron pigments known as _____.

Ans: Haemoglobin

Q6: The presence of haemoglobin gives red colour to blood.True/ False.

Ans: True

Q7: White blood cells, or WBCs, defend the body against_____.

Ans: Infection

Q8: When a blood vessel is cut, blood comes out immediately. After some time, a dark red clot is formed on the cut. Name the cell
responsible for this.

Ans: Platelets

Q9: Name the two types of blood vessels

Ans: Arteries and vein

Q10: Which of the two carry oxygen rich blood, arteries or vein?

Ans: Arteries

Q11: A number of capillariestogether form a _____

Ans: Vein

Q12: Where is heart located in human body?

Ans: Heart is located in the chest cavity with its lower parts towards the left.

Q13: Name the vein in the body that carries oxygen-rich blood.

Ans: pulmonary vein

Q14: pulmonary artery the only artery in the human body that carries carbon dioxide-rich blood.True/ False.

Ans: True

Q15: What is heart beat?

Ans: The muscles of the heart contract and relax, which constitutes a heartbeat.

Q16: What is pulse?

Ans: Throbbing that occurs in arteries due to flowing of blood is called pulse or the flow of blood in an artery over a bone is called the pulse.

Q17: The normal pulse rate is

a. 70 to 90 per minute.
b. 70 to 80 per minute.
c. 40 to 70 per minute.
d. 70 to 100 per minute.

Ans: 70 to 80 per minute.

Q18: What is removed along with water as sweat?

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

Q19: What is the function of valves present in veins?

Ans: Valves are present in veins to prevent backflow of blood in tissues.

Q20: Name the term for transport of food from leaves to other parts of plants

Ans: Translocation

Q21: Name the type of blood vessels which carry blood from organs to the heart.

Ans: Veins

Q22: Name the waste products formed in body.

Ans: Urea, uric acid and excess water.

Q23: Define excretion.

Ans: The removal of waste products is termed excretion.

Q24: Name organs of excretory system.

Ans: Kidneys, the ureters, the urinary bladder and the urethra.

Q25: Sweat makes the body warm and it helps to maintain normal temperature.True/ False

Ans: False

Q26: What is osmoregulation?

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

Q27: Heart pumps carbon-dioxide rich blood to_____and oxygen rich blood to rest of the _____.

Ans: Lungs and body

Q28: The roots of the plants remain in contact with underground water.True/ False

Ans: True

Q29: What does the xylem transport?

Ans: xylem-water and minerals

Q30: What does the phloem transport in plants?

Ans: Phloem- prepared food.

Q31: Vena cava transport oxygenated blood or deoxygenated blood?

Ans: deoxygenated blood

Q32: Transpiration process help in eliminating extra water from plants.True/ False

Ans: True

Q33: Arteries and veins are joined by a network of _____.

Ans: Capillaries

Q34: Kidney eliminates the waste material in the liquid form called as_____.

Ans: Urine

Q35: Name the main excretory product in human being.

Ans: Urea

Q36: Water absorption through roots can be increased by keeping the plants

a. in the shade
b. in dim light
c. under the fan
d. covered with a polythene bag

Ans: under the fan

Q37: In plants, water is transported through

a. Xylem
b. Phloem
c. Stomata
d. Root hair

Ans: Xylem

Q38: Name the instrument used to measure blood pressure.

Ans: Sphygmomanometer

Short Q&A:

Q1: What do you mean by dialysis? Explain.

Ans: Dialysis is an 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.

Q2: Write the two functions of kidneys.

Ans: The two functions of kidney are excretion and osmoregulation. 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.

Q3: State one function of the following:

a. Arteries
b. Vein
c. Capillaries

Ans:

a. Arteries- carry blood from heart to different parts of body
b. veins-carry blood from different parts of body to the heart.
c. Capillaries-exchange of material between blood and surrounding cells.

Q4: 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.

Q5: 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.

Q6: Explain 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 heartbeat.

Q7: Why walls of veins are thinner than the walls of arteries?

Ans: Veins do not have thick walls because blood in vein is no longer under pressure but blood emerges from the heart is under high pressure. So arteries have thick walls.

Q8: How do plants absorb water and minerals from soil?

Ans: Plants absorb water and minerals from soil by the roots. The root hair absorbs water and dissolved mineral nutrients from the soil. The roots remain in contact with underground water.

Q9: Describe composition of blood and explain function of its components?

Ans: The main components of bloods are :

1. Plasma: The fluid part of the blood is called plasma.
2. Red Blood Cells (RBC) contains a red pigment called haemoglobin. Haemoglobin bind with oxygen and transports it to all the parts of the body and ultimately to all the cells. It will be difficult to provide oxygen efficiently to all the cells of the body without haemoglobin. The presence of haemoglobin makes blood appear red.
3. White Blood cells (WBC) fight against germs that may enter our body thus provide an effective defence against infection, disease etc.
4. Platelets: They are another type of cells in blood, responsible for the formation of dark red clot in the blood when it comes in contact with air. They help in preventing excess bleeding from the injuries by plugging the skin openings or cuts with a thick dark red clot

Q10: Differentiate between arteries and veins.

Ans:

Arteries	veins

1. They carry blood away from heart They carry blood towards heart 2. They carry oxygenated blood except pulmonary artery 3. They lack valves 4. They are thick walled and deeply seated They are thin walled and superficially located beneath skin	1. They carry blood away from heart They carry blood towards heart 2. They carry deoxygenated blood except pulmonary vein 3. They have valves to prevent backflow of blood 4. They are thick walled and deeply seated They are thin walled and superficially located beneath skin

Q11: Differentiate betweenatrium and Ventricle.

Ans:

Atrium	Ventricle
1. TThey are the upper chambers of heart 2. They receive blood from various body parts	1. They are the lower chambers of heart. 2. They are thin walled They are thick walled

Q12: 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 enter their body the water carries away waste materials and carbon dioxide as it moves out.

Q13: Enlist the functions of blood.

Ans:

- It transports substances like digested food from the small intestine to the other parts.
- It carries oxygen and carbon dioxide to their respective organs and tissues
- It transports wastes for removal from the body.

Q14: Differentiate betweenxylem and phloem.

Ans:

Xylem	Phloem
1. It transports water and minerals	1. It transports food

2. It has unidirectional movement.	2. It has multidirectional movement

Q15: Differentiate between RBC and WBC.

Ans:

RBC	WBC
1. They are red in colour 2. They help in transport of gases 3. They have haemoglobin	1. They are colourless 2. They help in fighting against germs and infection 3. They lack haemoglobin

Q16: Why is blood needed by all the parts of the body?

Ans: The blood is needed by all parts of the body because it transports substances like digested food from the small intestine to the other parts of the body. It carries oxygen from the lungs to the cells of the body. It also transports waste for removal from the body.

Q17: Why blood is red in colour?

Ans: The presence of haemoglobin makes blood appear red. Haemoglobin bind with oxygen and transports it to all the parts of the body and ultimately to all the cells. It will be difficult to provide oxygen efficiently to all the cells of the body without haemoglobin.

Q18: What is the function of RBC?

Ans: Red Blood Cells (RBC) contain a red pigment called haemoglobin. Haemoglobin bind with oxygen and transports it to all the parts of the body and ultimately to all the cells. It will be difficult to provide oxygen efficiently to all the cells of the body without haemoglobin. The presence of haemoglobin makes blood appear red.

Q19: Does transpiration serve any useful function in the plants? Explain.

Ans: Plants absorb mineral nutrients and water from the soil. Not all the water absorbed is utilised by the plant. The water evaporates through the stomata present on the surface of the leaves by the process of transpiration. The evaporation of water from leaves generates a suction pull which can pull water to great heights in the tall trees. Transpiration also cools the plant.

Q20: Explain stomata and its function in plants.

Ans: Stomata are tiny pores present on the surface of the leaves. These pores are surrounded by 'guard cells'. Following are its function in plants:

1. The carbon dioxide required in the process of photosynthesis is made available by Stomata, through direct absorption from the air.
2. Stomata help Plants in absorption of mineral nutrients and water from the soil. Not all the water absorbed is utilised by the plant. The water evaporates through the stomata present on the surface of the leaves by the process of transpiration. The evaporation of water from leaves generates a suction pull which can pull water to great heights in the tall trees. Transpiration also cools the plant.

Q21: What will happen if there are no platelets in the blood?

Ans: The platelets are another type of cells in blood, which are responsible for formation of clot in blood when it comes in contact with air. So this prevents excess bleeding from the injury as it plugs the skin opening by clout formation on it. If there are no platelets in the blood, then we may die from a small injury due to excess blooding as there will be no clotting to plug it.

Q22: What is the significance of transport of materials in plants and animals?

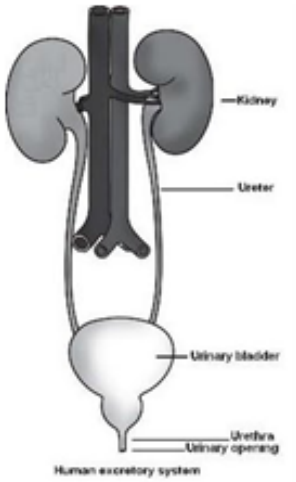
Ans: Transport of materials is very important in plant or in animals as all organisms need food, nutrition, water and oxygen for survival. The food is the source of energy and every cell of an organism gets energy by the breakdown of glucose. The cells use this energy to carry out vital activities of life. Therefore food must be made available to every cell of an organism. They need to transport all these to various parts of their body. Further, animals need to transport wastes to parts from where they can be removed.

Q23: Why is it necessary to excrete waste products?

Ans: When our cells perform their functions, certain waste products are released. These waste products are toxic and hence need to be removed from the body. The process of removal of wastes produced in the cells of the living organisms is called excretion.

Q24: Draw a labelled diagram of the human excretory system.

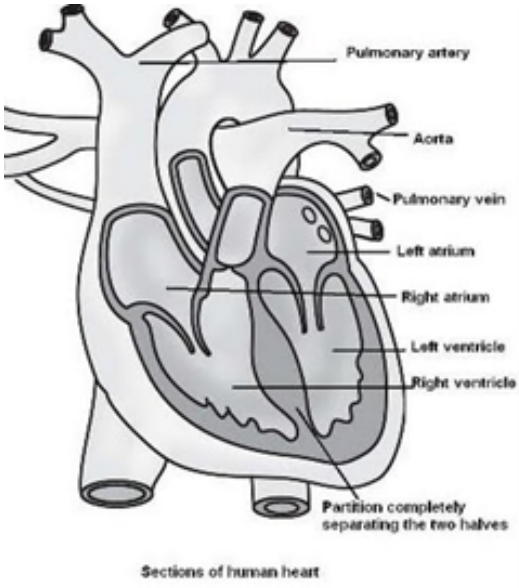
Ans:



Human excretory system

Q25: Draw a labelled diagram of the human heart.

Ans:



Sections of human heart

Q26: Briefly describes the human circulatory system?

Ans: The circulatory system is made up of the Blood vessels, heart and Blood that help and control the flow of the blood around the body. Heart pumps blood around your body by alternate systole and diastole. Blood is the connective tissue that carries food, air, waste product and hormones. it contain fluid medium called plasma and three types of cell RBC,WBC and Platelets. There are three distinct types of blood vessels, namely, arteries, veins and capillaries circulate blood around body.

Q27: Explain form and function of urinarysystem 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 Nephron 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.

Q28: What is heartbeat? Name the instrument used to provide information about heartbeat.

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

Q29: Sometimes doctor inject medicines directly in our bloodstream, where do they inject in artery or in vein?

Ans: doctor inject medicines in vein because veins are superficial and are easily locatable, secondly medicines need to be transported to all parts of the body through vein medicines reaches heart and from heart it is pumped to all part of body.

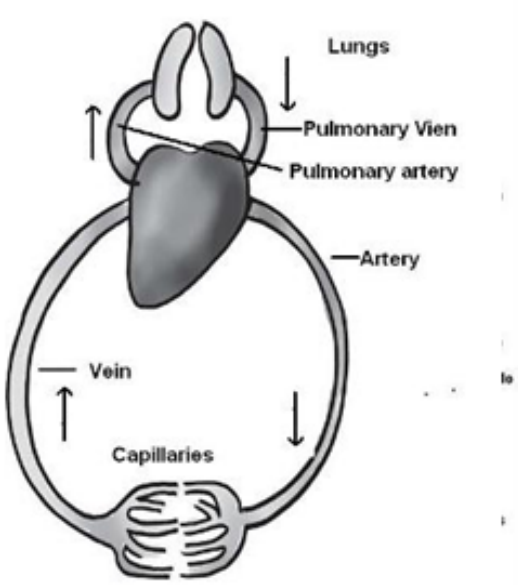
Q30: Explain the role of platelets in blood clotting.

Ans: The platelets are responsible for formation of clot in blood when it comes in contact with air. So this prevents excess bleeding from the injury as it plugs the skin opening by clout formation on it. If there are no platelets in the blood, then we may die from a small injury due to excess bleeding as there will be no clotting to plug it.

Q31: Describe the function of the heart and circulatory system.

Ans:

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 is located in the chest cavity with its lower tip slightly tilted towards the Left. Heart is roughly the size of a fist. To avoid mixing up of blood rich in oxygen with the blood rich in carbon dioxide, 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 of blood rich in oxygen with the blood rich in carbon dioxide.To understand the functioning of the circulatory system, start from the right side of the heart as show in the in Fig and follow the arrows. These arrows show the direction of the blood flow from the heart to the lungs and back to the heart from where it is pumped to the rest of the body.



Schematic diagram of circulation

The walls of the chambers of the heart are made up of muscles. These muscles contract and relax rhythmically. This rhythmic contraction followed by its relaxation constitutes a heartbeat. The rhythmic beating the various chambers of the heart maintain circulation of blood and transport of substances to the different parts of the body.

Q32: Describe the functioning of excretory system.

Ans: The cells in the body perform various activities. Waste products such as urea, uric acid and excess water are formed and have to be removed from the body. The removal of waste products is termed excretion. The organs that help in the process of excretion constitute the excretory system, and include the kidneys, the ureters, the urinary bladder and the urethra. The useful and harmful substances in blood enter the kidneys, where the capillaries filter it. The useful substances are reabsorbed, but the harmful substances are removed along with water in the form of urine. The urine from the kidneys comes down through long tubes called the ureters, which open into the urinary bladder where the urine is stored temporarily. When the bladder fills, the urine is disposed.

Long Q&A:

Q1: Explain the various transport system present in human beings.

Ans:

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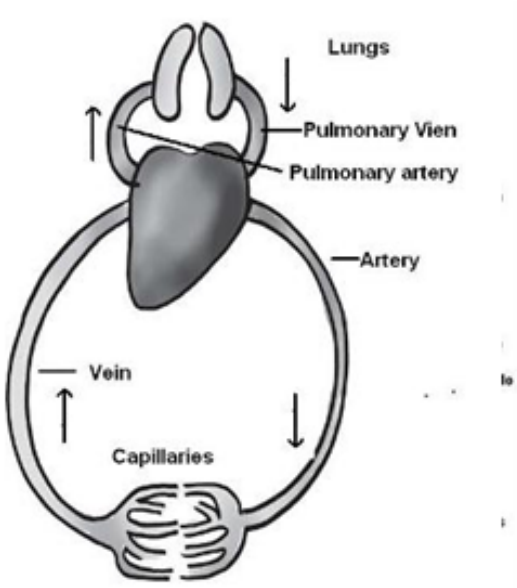

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Q2: Explain the function and components of blood.

Ans: The main components of bloods are :

1. Plasma: The fluid part of the blood is called plasma.
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