

Question:1

Write two examples for each of the following.

- | | | |
|----------------------------------|-------|-------|
| 1. Blood cells | ..... | ..... |
| 2. Body wastes in humans | ..... | ..... |
| 3. Constituents of urine | ..... | ..... |
| 4. Products excreted by plants | ..... | ..... |
| 5. Form of toxic waste in plants | ..... | ..... |

Solution:

1. Red blood cells, White blood cells
2. Carbon dioxide, urea
3. Water, urea
4. Carbon dioxide, Oxygen
5. Gum, resin

Question:2

Write one word for the following.

- | | |
|---|-------|
| 1. Straw-coloured fluid that consists of suspended blood cells | ..... |
| 2. Red pigment of the blood | ..... |
| 3. An instrument used to hear heartbeats | ..... |
| 4. The process by which water is lost through leaves | ..... |
| 5. A tissue in plants that takes water and minerals up the stem | ..... |

Solution:

1. Plasma
2. Haemoglobin
3. Stethoscope
4. Transpiration
5. Xylem

Question:3

Which one of these substances need to be transported within a body?

- (a) Food

- (b) Oxygen and waste materials
- (c) Water and minerals
- (d) All of these

Solution:

- (d) All of these.

Food, oxygen, water and minerals and waste products all need to be transported within the body.

Question:4

Amoeba gets nutrients and oxygen by which process?

- (a) Circulation
- (b) Diffusion
- (c) Transportation
- (d) All of these

Solution:

- (b) Diffusion.

Every part of *Amoeba* gets nutrients and oxygen by cellular diffusion.

Question:5

Which one of these is not a blood vessel?

- (a) Artery
- (b) Vein
- (c) Capillary
- (d) Xylem

Solution:

- (d) Xylem.

Xylem is a part of plant that carries water and minerals from the roots to the stem and leaves.

Question:6

Which one of these cells constitutes the blood?

- (a) RBCs
- (b) WBCs
- (c) Blood platelets
- (d) All of these

Solution:

(d) All of these.

Blood is made up of RBCs, WBCs and blood platelets.

Question:7

The functional unit of a kidney is the

- (a) nephron
- (b) ureter
- (c) urinary bladder
- (d) urethra

Solution:

(a) Nephron.

The functional unit of a kidney is nephron.

Question:8

What are the different kinds of substances that need to be transported in a living body?

Solution:

The different kinds of substances that need to be transported in a living body are food, oxygen, water, minerals and waste products.

Question:9

How do substances get transported in unicellular animals?

Solution:

In unicellular animals, every part of the body gets nutrients and oxygen through cell diffusion. E.g., *Amoeba* and *Paramecium*.

Question:10

What does the circulatory system consist of?

Solution:

The circulatory system comprises of blood, three types of blood vessels namely, arteries, veins and capillaries and heart, which is a thick muscular organ.

Question:11

Match the following.

Column A

Column B

Heart	Deposited in plants as crystals
Capillaries	Carries prepared food in plants
Arteries	Muscular organ
Phloem	Thinnest blood vessels
Excessive salts	Carries blood to different parts of the body

Solution:

<i>Column A</i>	<i>Column B</i>
Heart	Muscular organ
Capillaries	Thinnest blood vessels
Arteries	Carries blood to different parts of the body
Phloem	Carries prepared food in plants
Excessive salts	Deposited in plants as crystals

Question:12

Describe the composition of blood.

Solution:

Blood contains a straw coloured fluid called plasma, containing many cells like:

- Red blood cells – These are flat, disc shaped cells with depression in centre. They contain haemoglobin, the red pigment, which forms oxyhaemoglobin with oxygen and helps in transporting oxygen to all parts of body.
- White blood cells – These cells are larger and do not have haemoglobin. They actively move to destroy disease causing organisms and protect the body.
- Blood platelets – These cells are small, colourless, irregularly shaped and help in stopping the blood flow after an injury.

Question:13

Differentiate between arteries and veins.

Solution:

Arteries	Veins
Carry blood away from the heart.	Carry blood to the heart.
They have thick walls.	They have thin walls.
They are placed deeply under the skin and blood can move under high pressure.	They are placed superficially and blood does not move under high pressure..
They do not have valves.	They have valves to prevent back flow of impure blood to the organs.

Question:14

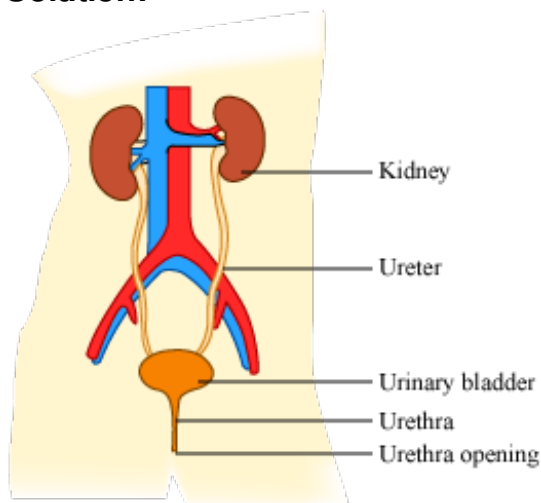
Describe how substances get transported within a plant body.

Solution:

In plants, a tissue called xylem, which acts as a pipeline, carries water and minerals from the roots to the stem and up to the leaves of the plant. Absorption of water and minerals always continues in plants. During transpiration, water is lost in form of water vapour from the stomata on the leaves. This creates low pressure and due to a pulling force, water and minerals are pulled up. This way water and minerals are transported to all parts of the plant.

Question:15

With the help of a labelled diagram, describe now the human body gets rid of its wastes through excretion.

Solution:

The human excretory system comprises of a pair of kidneys, two tubes called ureters, a urinary bladder and a urethra. Kidneys help in removing the waste products in the blood. When blood enters the kidney, useful substances are filtered and absorbed back into the blood by nephrons in kidneys. Waste products get dissolved in water and urine is formed, which travels through the tubular ureters. Urine gets stored in the urinary bladder, which opens into the urethra. Urine passes out of the body through the opening at the end of urethra.

Question:16

What is dialysis? How does it work?

Solution:

Dialysis is a technique of removing toxic substances in blood using a machine when the kidneys are unable to perform their excretory function. The dialysis machine, which is also called an artificial kidney, is used for this purpose. Blood from an artery of an arm of the patient is passed through the dialysis machine, which removes urea and excess salts. The blood is then passed

back to the patient's body through a vein.

Question:17

Name the different kinds of cells found in blood.

Solution:

The different types of cells in the blood include red blood cells, white blood cells and blood platelets.

Question:18

Differentiate between red blood cells and white blood cells.

Solution:

Red blood cells	White blood cells
Smaller in size.	Larger in size.
Contain red pigment, haemoglobin.	Do not contain red pigment, haemoglobin.
Help in transporting oxygen to all parts of the body.	Protect the body by destroying disease causing organisms.

Question:19

What are capillaries?

Solution:

Capillaries are thinnest blood vessels which connect arteries and veins. The walls of capillaries are very thin and diffusion of gases and chemical substances can take place very easily.

Question:20

Differentiate between transpiration and translocation.

Solution:

Transpiration	Translocation
It is the loss of water vapours from the stomata of the leaves.	It is process of transporting food prepared by leaves to all parts of plant.

Question:21

What is excretion? What is the human excretory system comprised of?

Solution:

Excretion is the process of removal of waste products from the cells of a living organism. Human excretory system comprises of a pair of reddish, bean shaped kidneys, two tubes called ureters, a urinary bladder and a urethra.

Question:22

Name the main products excreted by plants.

Solution:

The main waste products excreted by plants are carbon dioxide, oxygen, excess water, excessive salts, and some toxic wastes like gum, resin and latex.