

B3 – Movement of Substances Quiz

1. How does oxygen move in and out of cells?

Diffusion

2. Name the enzyme produced in salivary glands.

Amylase

3. How are cells found in salivary glands adapted to produce amylase?

Many ribosomes which produce proteins (amylase is made of protein).

4. Why is it useful to have lots of villi?

They provide a large surface area for increased diffusion of nutrients.

5. Give one advantage and one disadvantage of using the modern ventilator rather than the iron lung ventilator.

Modern ventilator is more portable, allows freedom of movement; it is more uncomfortable and makes it more difficult to eat and speak.

6. Explain why roots need to use the osmosis and active transport to absorb water and ions.

Solution in soil is more dilute so water moves from more dilute to more concentrated region. Concentration of ions in soil is less so energy is needed to move ions into the plant.

7. Water loss from leaves is known as what?

Transpiration

8. How does the closing of stomata help a plant?

It reduces water loss.

9. Why do root cells contain many mitochondria?

Energy released from cellular respiration is needed for active transport.

10. Why do root cells store starch?

Starch is an energy source for respiration.

11. Give three features of the alveoli that allow large amounts of oxygen to enter the blood.

Large surface area, thin (one cell thick), good blood supply

12. Breathing allows large amounts of oxygen to enter the blood. How does breathing do this?

It brings oxygen into lungs and keeps the oxygen concentration > blood oxygen concentration.

13. Explain why plant cells swell up when placed into water.

Water enters via semi-permeable membrane. This is called osmosis.

14. Why do animal cells which are placed in water burst, but plant cells don't?

Plant cells have a cell wall, animal cells don't.

15. Define diffusion.

The movement of molecules from an area of high concentration to an area of low concentration.

16. Define active transport.

Movement of molecules from low concentration to high concentration which requires energy.

17. Apart from water, what else is contained in sweat?

Ions

18. Why do plants lose water more rapidly on a warm and windy day?

Faster diffusion because the molecules move faster and the concentration of water in the air around the leaf remains low.

19. Give three features of villi that help the small intestines to function.

Large surface area, one cell thick, good blood supply, have enzymes

20. Explain how emphysema reduces the amount of oxygen which diffuses into the blood.

Lung tissue has a thicker surface and fewer alveoli.

21. What is osmosis?

The movement of water from a high concentration of water to a low concentration of water.

22. Give two examples of where osmosis is used in living things.

Water absorption in the large intestines; guard cells to maintain turgor; uptake of water by root cells

23. Why do plants need stomata?

To allow carbon dioxide to enter.

24. Describe the changes that take place in the composition of blood as it passes through the lungs.

Concentration of oxygen increases and concentration of carbon dioxide decreases.

25. Which part of the blood transports most carbon dioxide?

Plasma

26. Which part of the blood transports most oxygen?

Haemoglobin/red blood cell

27. Give one feature of the cell wall which allows the cell to become turgid.

Elastic