

GCSE Biology A (Gateway)

J247/01 B1-B3 and B7 Foundation (Foundation Tier)

Question Set 2

Multiple Choice Questions

B2: Scaling Up

1 A student uses a microscope.
The magnification on the eyepiece lens is $\times 10$.
The magnification on the objective lens is $\times 4$.
What is the total magnification?
A 2.5
B 6
C 14
D 40
Your answer

[1]

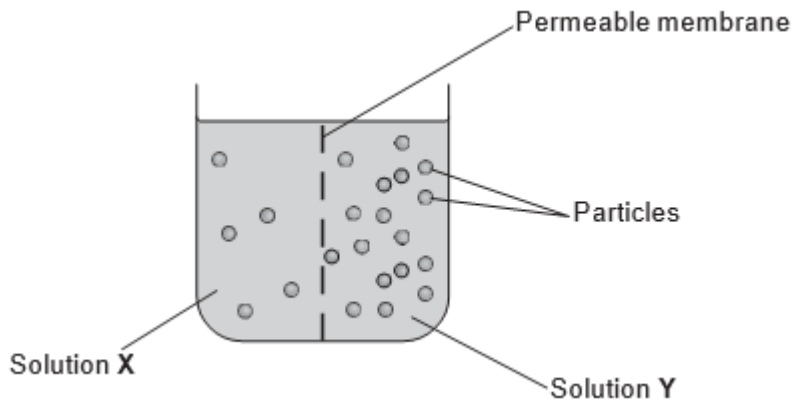
2 Which type of plant cell takes in water?
A Guard cell
B Phloem cell
C Root hair cell
D Xylem cell
Your answer

[1]

3 In DNA, which base does A (adenine) pair with?
A A
B C
C G
D T
Your answer

[1]

4 Look at the diagram. It shows the particles dissolved in two solutions.



The particles can diffuse through the permeable membrane.

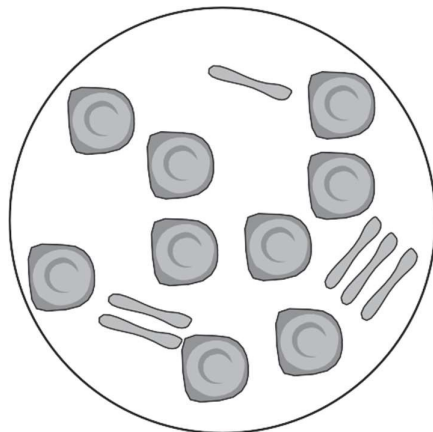
Which statement about the particles is true in this diagram?

- A Particles move in both directions across the permeable membrane.
- B Particles only move from X to Y.
- C Particles only move from Y to X.
- D Particles stop moving when the concentrations become equal.

Your answer

[1]

5 Which type of human cell is shown in this diagram?



- A Egg cells
- B Red blood cells
- C Sperm cells
- D White blood cells

Your answer

[1]

6 Why do plant root hair cells use active transport to take in minerals?

- A Minerals are dissolved in water in the soil.
- B Minerals are needed by the plant in very low concentrations.
- C Minerals are present at very high concentrations in the soil.
- D Minerals are present at very low concentrations in the soil.

Your answer

[1]

7 Which one of these stages comes **first** during mitosis?

- A The nuclear membrane forms.
- B The nuclear membrane breaks down.
- C Chromosomes separate.
- D Chromosomes line up on the equator.

Your answer

[1]

8 Transpiration has a cooling effect on the leaves of plants.

Which statement **best** describes how this happens?

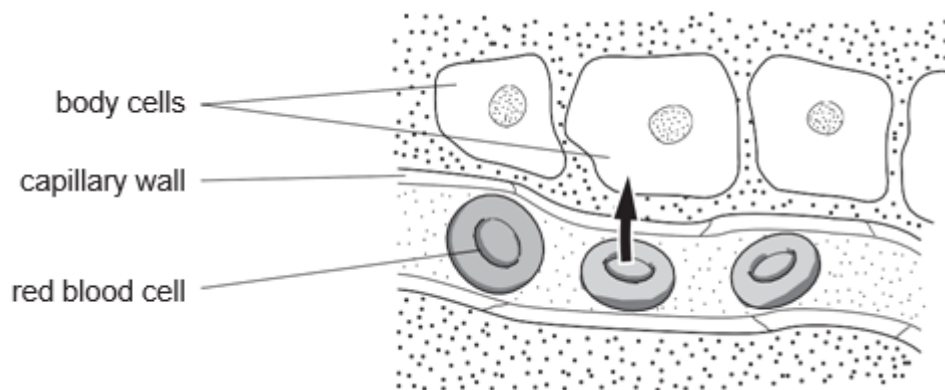
- A Evaporation of water from the leaf removes heat energy.
- B Water entering the stomata takes heat energy from the leaf surface.
- C Water dripping off the leaf causes heat energy to be lost.
- D Water falling on the leaf removes heat energy.

Your answer

[1]

9 The diagram shows the direction of **oxygen** transfer from red blood cells to body cells.

What process does the arrow show?



A Active transport

B Diffusion

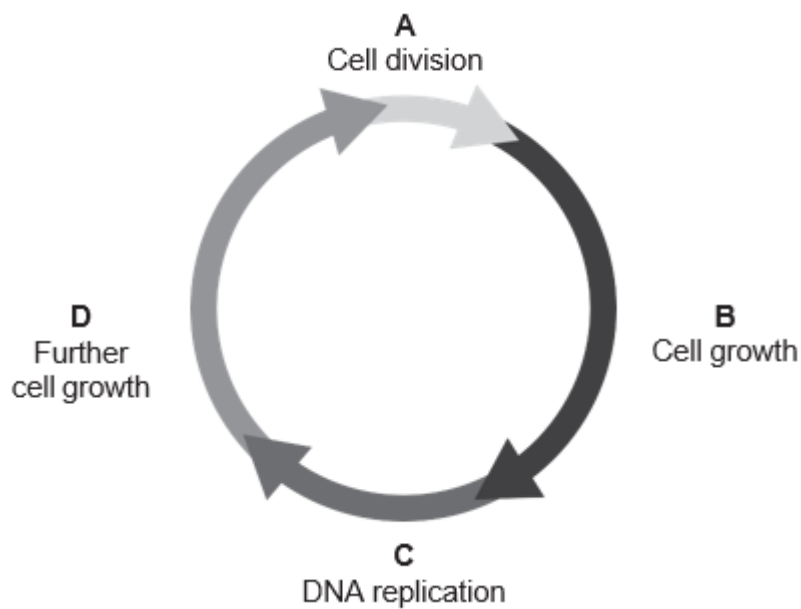
C Osmosis

D Transpiration

Your answer

[1]

10 During which phase of the cell cycle does mitosis happen?



Your answer

[1]

11 A cube of potato is used to investigate the effect of surface area on osmosis.

The cube is $3 \times 3 \times 3$ cm.

What is the surface area to volume ratio of the cube?

A 1:2

B 2:1

C 6:1

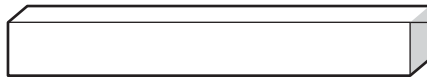
D 1:6

Your answer

[1]

12 An experiment is carried out to find the concentration of potato tissue.

Four chips are cut from a potato.



At the start, each chip is 50 mm long, 10 mm wide and 10 mm high.

Each chip is put in a different sucrose solution **A**, **B**, **C** and **D**.

The volumes of the chips are calculated after 1 hour.

Sucrose solution	Volume of chip (mm ³)
A	50
B	500
C	5000
D	50 000

Which sucrose solution has the same concentration as the potato tissue?

Your answer

[1]

Total Marks for Question Set 2: 12

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