

IGCSE • CIE • Biology

🕒 5 mins ❓ 5 questions

Multiple Choice Questions

3.1 Diffusion, Osmosis & Active Transport

3.1.1 Diffusion in Biology / 3.1.2 Factors that Influence Diffusion / 3.1.3 Water / 3.1.4 Osmosis / 3.1.5 Osmosis Experiments / 3.1.6 Osmosis in Animals & Plants / 3.1.7 Active Transport / 3.1.8 Proteins & Active Transport

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Total Marks

/5

1 A group of students carried out an investigation into osmosis using cylinders of potato.

The results from their experiment are shown below.

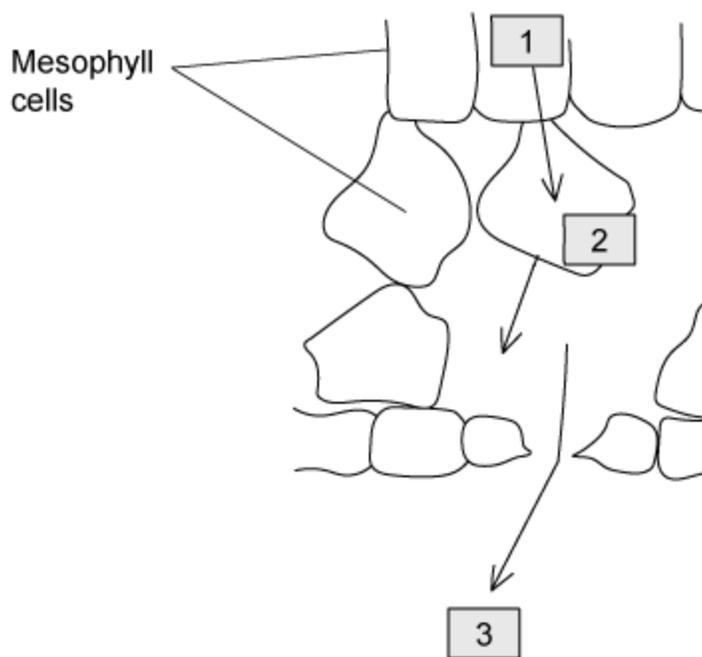
concentration of salt solution / mol dm ⁻³	mass of potato cylinder at start / g	mass of potato cylinder after 24 hours / g
0.2	2.5	2.7

Which statement below correctly explains this change in mass?

	movement of water	cause of this movement
A	out of the potato cells	the salt solution has a lower water potential than the potato cells.
B	out of the potato cells	the salt solution has a higher water potential than the potato cells.
C	into the potato cells	the salt solution has a lower water potential than the potato cells.
D	into the potato cells	the salt solution has a higher water potential than the potato cells.

(1 mark)

2 The image below shows part of a cross-section through a leaf.



Which row of the table below correctly shows the movement of various substances?

	evaporation of water	movement of water by osmosis	diffusion of water vapour
A	3	1	2
B	2	3	1
C	3	2	1
D	2	1	3

(1 mark)

- 3** Two identical square pieces of beetroot are cut. Each square of beetroot has a mass of 3.0 g. One (S) is placed in a concentrated salt solution, the other (T) is placed in pure water.

What would the masses of the two pieces of beetroot be after 3 hours?

	mass of beetroot squares	
	S	T
A	3.0	3.2
B	2.7	3.0
C	2.9	3.2
D	3.1	2.9

(1 mark)

4 A group of students carried out an investigation into osmosis using cylinders of potato.

The results from their experiment are shown below.

concentration of salt solution / mol dm ⁻³	length of potato cylinder at start / mm	length of potato cylinder after 24 hours / mm
?	35	33

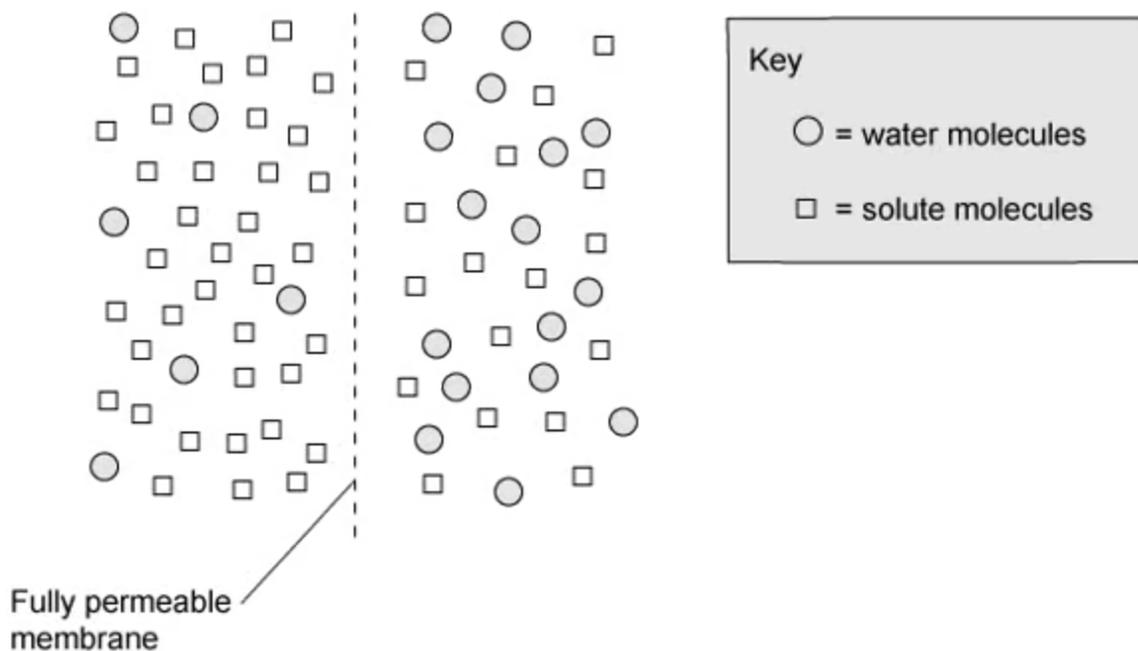
Which statement below correctly explains this change in length and shows the concentration of the sugar solution?

	concentration of sugar solution	cause of this movement
A	0.0	the sugar solution is more concentrated than the solution inside the potato.
B	0.6	the solution in the potato is more dilute than the solution around the potato.
C	0.6	the solution in the potato is less dilute than the solution around the potato.
D	0.0	the sugar solution is less concentrated than the solution inside the potato.

(1 mark)

5 Extended only

The image below shows molecules in two solutions separated by a membrane.



In which direction would there be movement?

	water molecules	solute molecules
A	right to left	no net movement
B	left to right	right to left
C	left to right	no net movement
D	right to left	left to right

(1 mark)