Movement into and out of cells – 2020 IGCSE 0610

1. March/2020/Paper_12/No.7

Which row describes osmosis?

	movement of water	energy from respiration used	movement through a partially permeable membrane
A	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✗
D	✗	✗	✓

key

✓ = yes

✗ = no

2. March/2020/Paper_12/No.8

A student made the following statements about the movement of ions by active transport.

1 It is the net movement of particles from a low concentration to a high concentration.

2 It is the net movement of particles from a high concentration to a low concentration.

3 It requires the use of energy from respiration.

4 It can only take place in living cells.

Which statements are correct?

A 1, 3 and 4 **B** 1 and 4 only **C** 2 and 4 only **D** 2 only

3. March/2020/Paper_22/No.7

Which row describes osmosis?

	movement of water	energy from respiration used	movement through a partially permeable membrane
A	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✗
D	✗	✗	✓

key

✓ = yes

✗ = no

4. March/2020/Paper_22/No.8

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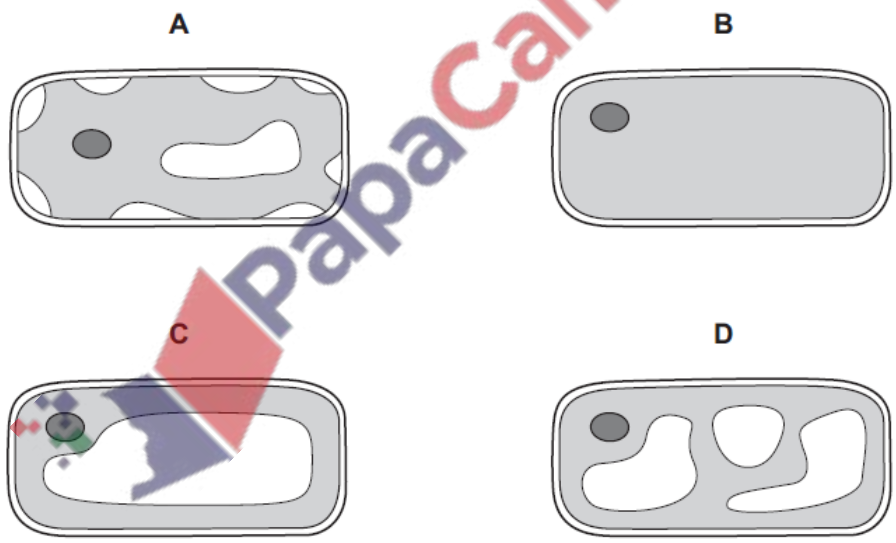
A 1, 3 and 4 **B** 1 and 4 only **C** 2 and 4 only **D** 2 only

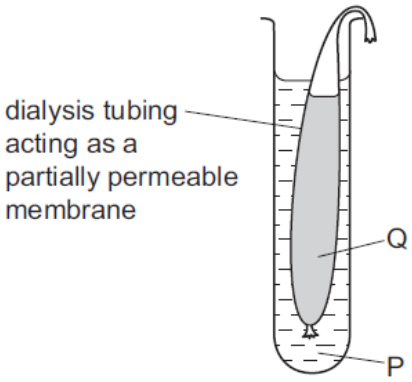
5. June/2020/Paper_11/No.6

Which diagram shows the appearance of a plant cell several minutes after it has been placed in a concentrated solution of sugar?



6. June/2020/Paper_11/No.7

The apparatus shown is used to demonstrate osmosis.



The mass of the dialysis tubing and contents was 11.2 g at the start of the demonstration and 9.4 g at the end.

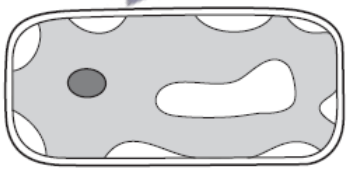
Which solutions would cause this change in mass?

	solution P	solution Q
A	5% salt solution	10% salt solution
B	10% salt solution	5% salt solution
C	water	5% salt solution
D	water	10% salt solution

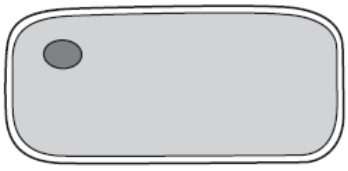
7. June/2020/Paper_12/No.6

Which diagram shows the appearance of a plant cell several minutes after it has been placed in a concentrated solution of sugar?

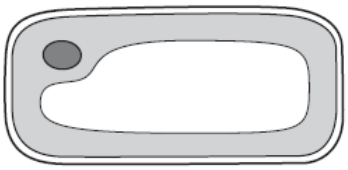
A



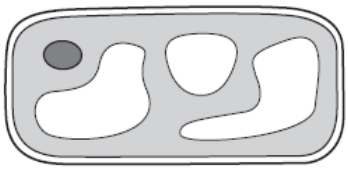
B



C



D



8. June/2020/Paper_12/No.7

Uncooked pieces of potato of identical size were placed in different liquids for one hour and then measured.

Which liquid will cause a decrease in the size of the piece of potato?

A pure water

B sugar solution less concentrated than the potato cell contents

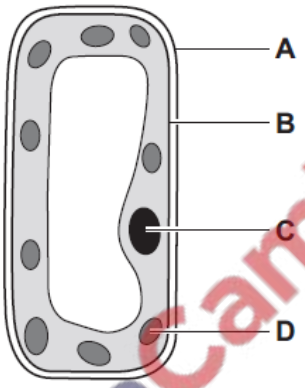
C sugar solution more concentrated than the potato cell contents

D sugar solution with the same concentration as the potato cell contents

9. June/2020/Paper_12/No.10

The diagram shows a plant cell.

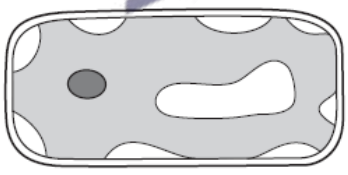
In which part of the cell does photosynthesis occur?



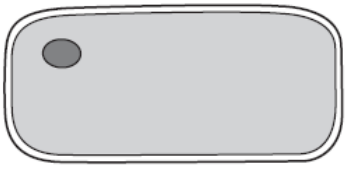
10. June/2020/Paper_13/No.6

Which diagram shows the appearance of a plant cell several minutes after it has been placed in a concentrated solution of sugar?

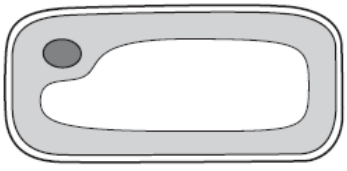
A



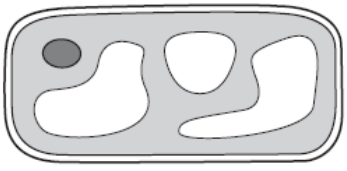
B



C



D



11. June/2020/Paper_13/No.7

Which statement about active transport is correct?

A Particles move into cells using energy released by photosynthesis.

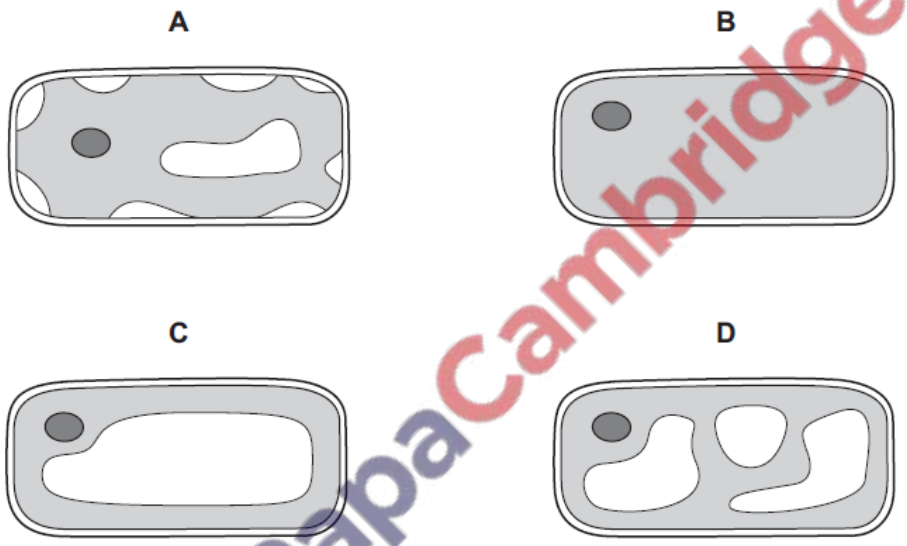
B Particles move across a cell wall without using energy.

C Particles move from a region of higher concentration to a region of lower concentration.

D Particles move across a cell membrane using energy released by respiration.

12. June/2020/Paper_21/No.5

Which diagram shows the appearance of a plant cell several minutes after it has been placed in a concentrated solution of sugar?



13. June/2020/Paper_21/No.6

Plant cells are placed in a solution with a higher water potential than the plant cell contents.

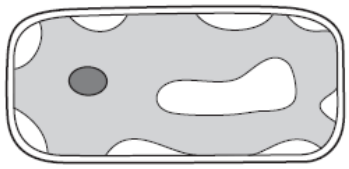
What will happen?

	direction of water movement	volume of vacuole
A	enters cells	decreases
B	enters cells	increases
C	leaves cells	decreases
D	leaves cells	increases

14. June/2020/Paper_22/No.5

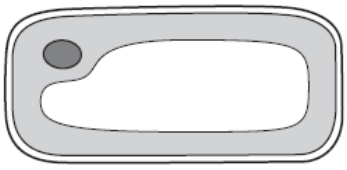
Which diagram shows the appearance of a plant cell several minutes after it has been placed in a concentrated solution of sugar?

A

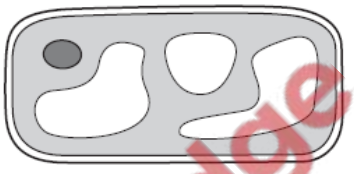


B

C



D



15. June/2020/Paper_22/No.6

An uncooked piece of potato was placed in a solution. After two hours the size of the piece of potato had decreased.

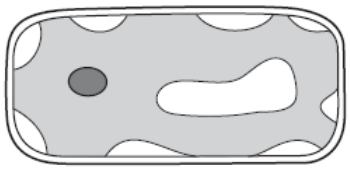
Which row explains why this has happened and how the potato cells have changed?

	water potential		potato cells become
	potato cells	external solution	
A	higher	lower	flaccid
B	higher	lower	turgid
C	lower	higher	flaccid
D	lower	higher	turgid

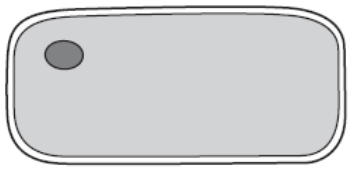
16. June/2020/Paper_23/No.5

Which diagram shows the appearance of a plant cell several minutes after it has been placed in a concentrated solution of sugar?

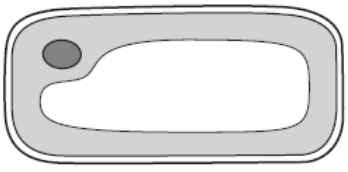
A



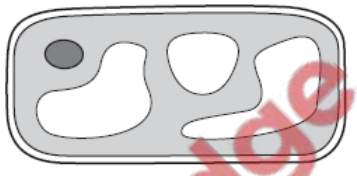
B



C



D



17. June/2020/Paper_23/No.3

Onion plant cells swell but do not burst when placed in distilled water.

Which cell component prevents the onion plant cells from bursting?

A cell membrane

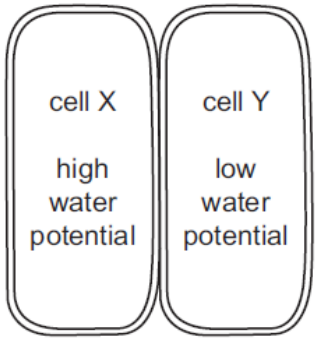
B cell wall

C nucleus

D vacuole

18. June/2020/Paper_23/No.6

The diagram shows two adjacent plant cells.



Which statement describes what will happen to the water in the cells?

A equal movement between cells

B net movement from X to Y

C net movement from Y to X

D no movement between cells

19. June/2020/Paper_41/No.3

(a) Dialysis tubing is an artificial membrane, which is similar to the lining of the intestine.

A student investigated the diffusion of glucose through dialysis tubing by using the apparatus shown in Fig. 3.1.

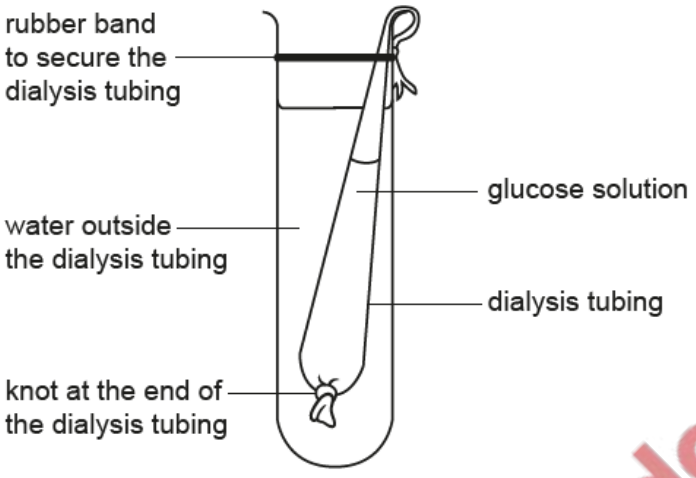


Fig. 3.1

The results are shown in Table 3.1.

Table 3.1

time/minutes	results of the Benedict's tests on the water outside the dialysis tubing
0	blue
5	green
10	yellow
15	red

(i) Describe and explain the results shown in Table 3.1.

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..... [3]

(ii) The student repeated the investigation with a higher concentration of glucose in the dialysis tubing.

Predict the results that the student would observe.

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(b) Fig. 3.2 shows a drawing of a cell from the lining of the small intestine. The lumen is the space inside the intestine where food is digested.

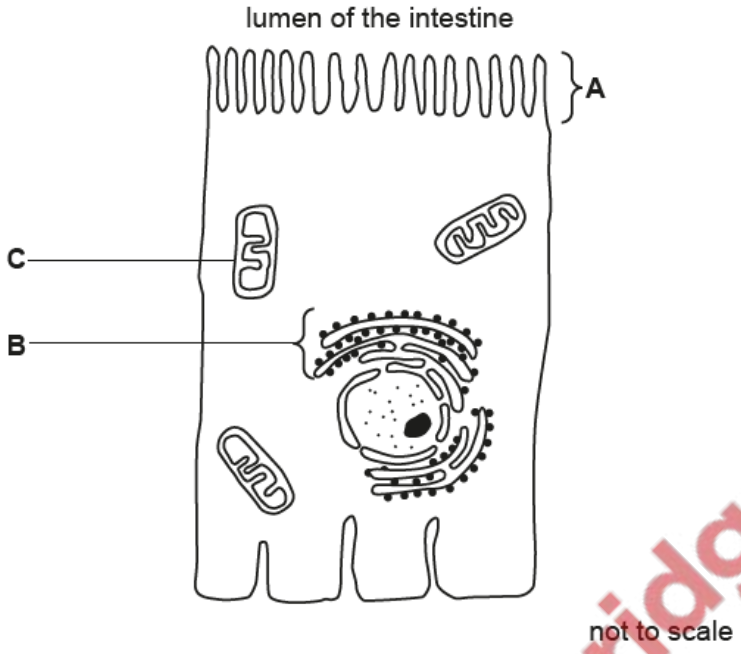

Fig. 3.2

State the names of the **three** labelled structures in Fig. 3.2 **and** describe the role of each structure in the intestinal cell.

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(c) The cholera bacterium can survive in the small intestine and the large intestine. The bacterium releases a toxin that interacts with receptors on the surface of cells.

Fig. 3.3 shows the effect of the toxin. The arrows indicate the direction of movement.

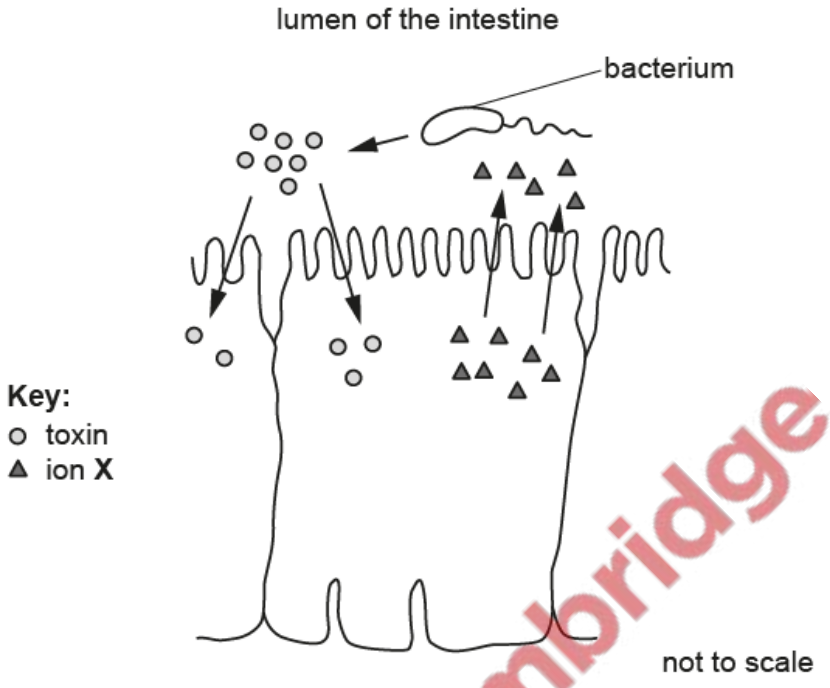

Fig. 3.3

The toxin stimulates the secretion of ion **X** out of the intestinal cell.

(i) State the name of ion **X**.

..... [1]

(ii) Describe the effects on the body of the secretion of ion **X** into the lumen of the intestine.

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..... [4]

[Total: 15]