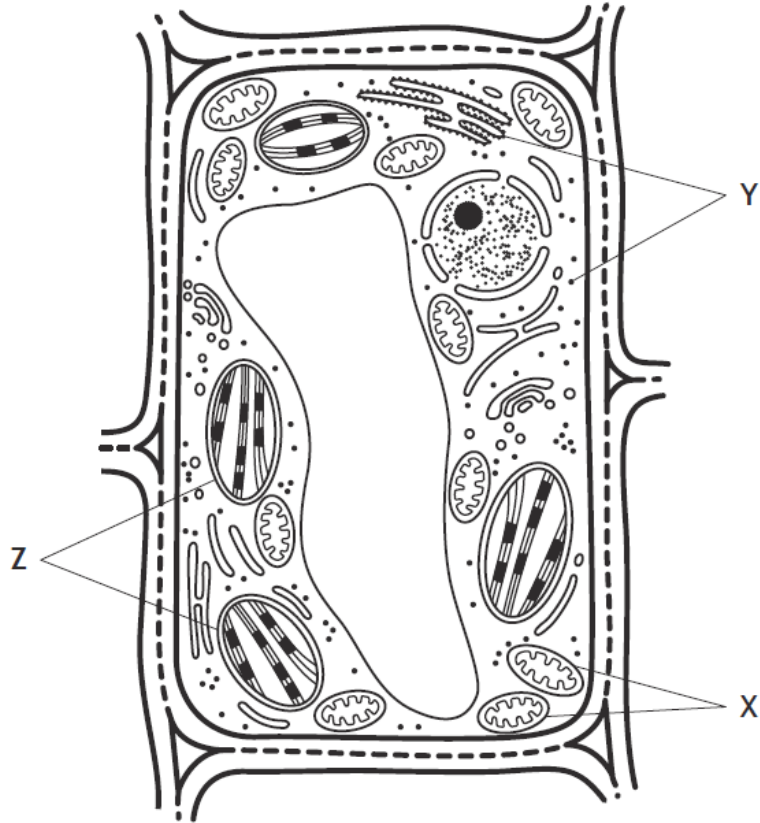


1. A variegated leaf contains green areas and white areas.  
A student investigated cells from both areas.  
One of these cells is shown below.



- (a) State the letter which identifies ribosomes. 1

\_\_\_\_\_

- (b) What evidence in the diagram suggests that this cell produces large quantities of ATP? 1

\_\_\_\_\_

- (c) The student concluded that this cell is from the green area. Explain why the student's conclusion is correct. 2

\_\_\_\_\_

\_\_\_\_\_

Total marks 4

A group of students carried out an investigation into the variety of cell types.



The types of cell they examined are shown in the box below.

Animal	Plant	Bacterial	Fungal
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(a) (i) Identify the type(s) of cell which have a cell wall. 1

\_\_\_\_\_

(ii) Identify the type(s) of cell which have a plasmid. 1

\_\_\_\_\_

(iii) Some organelles are found in all cells.

Choose one of the following organelles and tick (✓) the appropriate box.

Describe the function of the chosen organelle. 1

Ribosome                       Mitochondria

Function \_\_\_\_\_

\_\_\_\_\_

(continued)

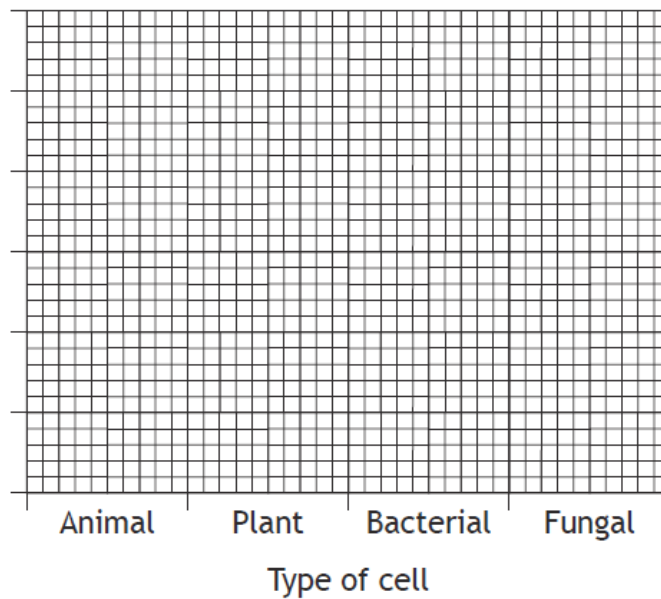
- (b) The students then measured a number of cells and calculated the average cell sizes. The results are shown in the table below.

<i>Type of cell</i>	<i>Average size of cell (µm)</i>
Animal	24
Plant	48
Bacterial	3
Fungal	7

On the graph paper below, complete the vertical axis and draw a bar chart to show the average size of the cells shown in the table.

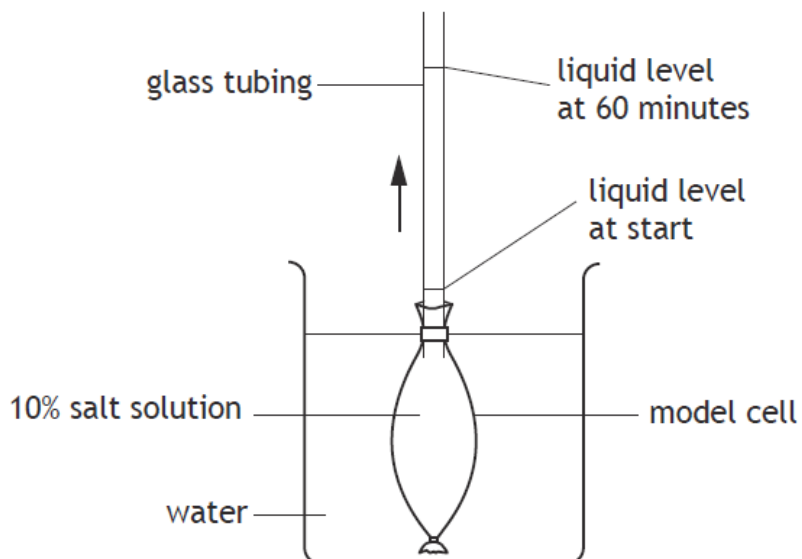
2

(Additional graph paper, if required, can be found on *Page twenty-six*)



Total marks 5

The apparatus shown below was used to investigate the movement of water into and out of a model cell. The model cell had a selectively permeable membrane.



The liquid level in the glass tubing was measured every 10 minutes for 60 minutes.

The results are shown in the table below.

<i>Time (minutes)</i>	<i>Liquid level (mm)</i>
0	10
10	22
20	32
30	40
40	48
50	56
60	64

(a) Name the process which caused the liquid level to rise.

1

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(continued)

- (b) Explain how this process caused the liquid level to rise. 2

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- (c) Calculate the average rate of movement of liquid in the glass tubing. 1

*Space for calculation*

\_\_\_\_\_ mm per minute

- (d) When the investigation was repeated, the average rate of movement of liquid was slower.  
Suggest one difference in the way that the investigation was set up that could have caused this change in results. 1

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Total marks 5

Which structural feature is found in a plant cell and not in an animal cell?

- A Nucleus
- B Cell wall
- C Cell membrane
- D Cytoplasm

Which line in the table below identifies the direction of diffusion of the three substances during muscle contraction?

	<i>Substance</i>		
	<i>Glucose</i>	<i>Oxygen</i>	<i>Carbon dioxide</i>
A	out	out	in
B	in	out	in
C	out	in	out
D	in	in	out

In the diagrams below, the circles represent molecules on either side of a cell membrane. In which of these diagrams would the molecules move into a cell by diffusion?

