

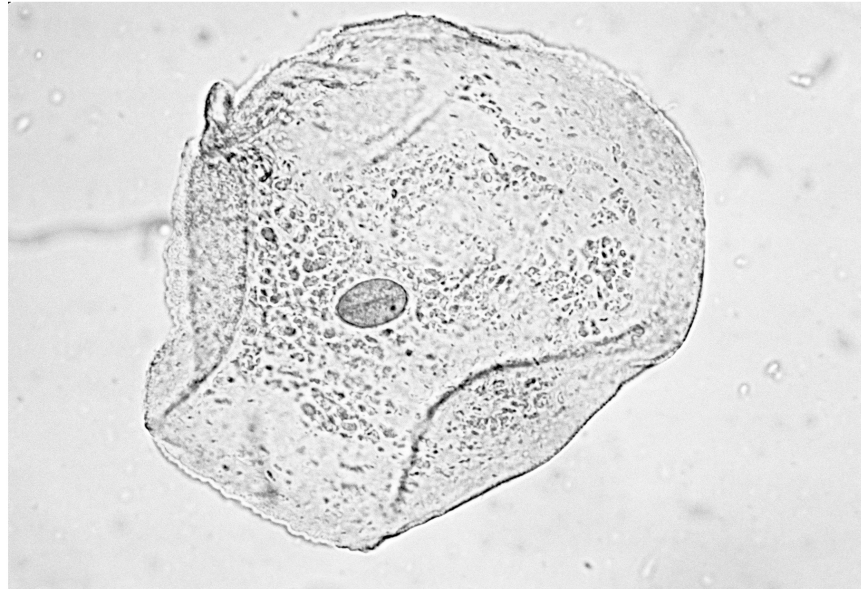
Answer **all** questions in the spaces provided.

Do not write
outside the
box

0 1

Figure 1 shows an animal cell viewed using a microscope.

Figure 1



0 1 . 1

The cell contains a nucleus.

What is the function of the nucleus?

[1 mark]

0 1 . 2

Name **one** type of cell that does **not** contain a nucleus.

[1 mark]



0 1 . 3 Draw a simple diagram of the cell in **Figure 1**.

Label **two** parts of the cell.

[2 marks]

0 1 . 4 Name **one** structure found in a plant cell but **not** found in an animal cell.

[1 mark]

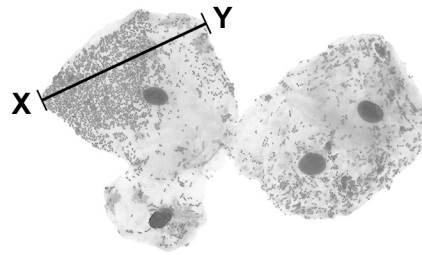
Question 1 continues on the next page

Turn over ►



Figure 2 shows some different cells.

Figure 2



0 1 . 5 The real length from point X to point Y is 0.06 mm

Calculate the magnification.

Use the equation:

$$\text{magnification} = \frac{\text{size of image}}{\text{real size of object}}$$

[3 marks]

Magnification = × _____



0 1 . 6 The cells shown in **Figure 2** were viewed using a light microscope.

Give **two** advantages of using an electron microscope instead of a light microscope.
[2 marks]

1 _____

2 _____

10

Turn over for the next question

Turn over ►



Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.1	controls the (activities of the) cell	allow contains genetic information / genes / DNA / chromosomes do not accept brain do not accept controls substances entering / leaving the cell	1	4.1.1.2 AO1
01.2	red blood cell / RBC or bacteria / prokaryote or xylem (cell)	allow erythrocyte ignore blood cell unqualified ignore platelets allow named examples of bacteria do not accept virus	1	4.2.2.3 4.1.1.1 AO1
01.3	cell shape is similar to cell in Figure 1 and nucleus present any two features correctly identified and labelled: <ul style="list-style-type: none"> • nucleus • (cell) membrane • cytoplasm • mitochondria / mitochondrion • ribosome(s) 	ignore shading do not accept a cell wall drawn allow cell wall if drawn and correctly labelled do not accept other plant sub-cellular structures	1 1	4.1.1.2 AO2 8.2.1 AO1
01.4	any one from: <ul style="list-style-type: none"> • (cellulose cell) wall • chloroplast • (permanent) vacuole 	ignore chlorophyll allow starch grain	1	4.1.1.2 AO1

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.5	24 (mm) or 2.4 (cm) $\frac{24}{0.06}$ or $\frac{2.4}{0.06}$ (×) 400	an answer of (×) 400 scores 3 marks an answer of (×) 40 scores 2 marks allow in range 23 to 25 (mm) or in range 2.3 to 2.5 (cm) allow correct calculation from their measurement of X to Y in the range 2.3 cm to 3.5 cm or 23 mm to 35 mm allow correct magnification derived from their measurement in mm ignore rounding errors	1 1 1	4.1.1.5 AO2
01.6	high(er) magnification high(er) resolution or high(er) resolving power	ignore bigger / zoom allow see more detail if neither mark awarded allow 1 mark for see smaller objects or see smaller sub-cellular structures allow 3D image	1 1	4.1.1.5 AO1
Total			10	