

07

Figure 12 shows an animal cell viewed using a microscope.

Figure 12



07.1

The cell contains a nucleus.

What is the function of the nucleus?

[1 mark]

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07.2

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

[1 mark]

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**0 7 . 3** Draw a simple diagram of the cell in **Figure 12**.

Label **two** parts of the cell.

**[2 marks]**

**0 7 . 4** Name **one** structure found in a plant cell but **not** found in an animal cell.

**[1 mark]**

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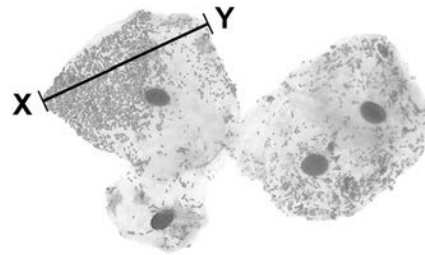
**Question 7 continues on the next page**

**Turn over ►**



Figure 13 shows some different cells.

Figure 13



0 7 . 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]

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Magnification =  $\times$  \_\_\_\_\_



07.6

The cells shown in **Figure 13** 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.
07.1	controls the (activities of the) cell	allow contains genetic information / genes / DNA / chromosomes  do <b>not</b> accept brain do <b>not</b> accept controls substances entering / leaving the cell	1	4.1.1.2 AO1
07.2	red blood cell / RBC  <b>or</b> bacteria / prokaryote  <b>or</b> xylem (cell)	allow erythrocyte  ignore blood cell unqualified ignore platelets  allow named examples of bacteria  do <b>not</b> accept virus	1	4.2.2.3 4.1.1.1 AO1
07.3	cell shape is similar to cell in <b>Figure 12 and</b> nucleus present  any <b>two</b> features correctly identified and labelled: <ul style="list-style-type: none"> <li>• nucleus</li> <li>• (cell) membrane</li> <li>• cytoplasm</li> <li>• mitochondria / mitochondrion</li> <li>• ribosome(s)</li> </ul>	ignore shading  do <b>not</b> accept a cell wall drawn  allow cell wall if drawn and correctly labelled  do <b>not</b> accept other plant sub-cellular structures	1   1	4.1.1.2 AO2 8.2.1 AO1
07.4	any <b>one</b> from: <ul style="list-style-type: none"> <li>• (cellulose cell) wall</li> <li>• chloroplast</li> <li>• (permanent) vacuole</li> </ul>	ignore chlorophyll  allow starch grain	1	4.1.1.2 AO1

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