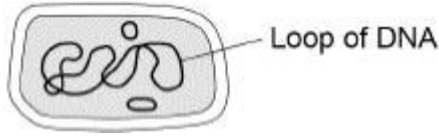


Q1.

This question is about cells.

(a) **Figure 1** shows a cell.

Figure 1



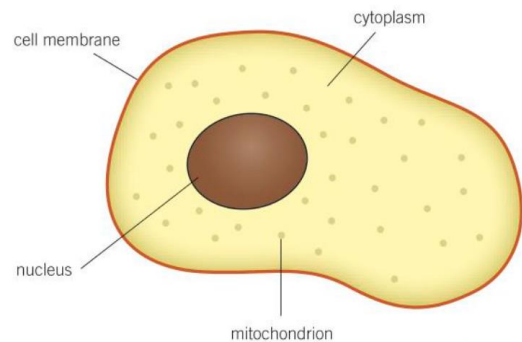
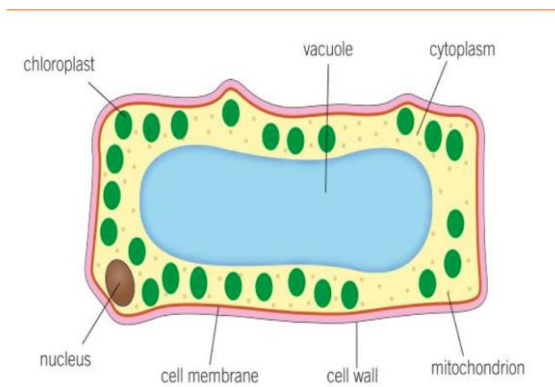
Read each exam style question carefully. Tick the correct number of boxes and use appropriate key terms to support your answer. Be ready to self-mark your own work using RED pen to track progress and highlight areas for development

What type of cell is shown in **Figure 1**?

Tick (✓) **one** box.

- Animal
- Bacterium
- Plant

(1)



Observe each cell type above. Devise a table to compare each cell. Name each cell type and state similarities and differences between each (4)

.....

.....

.....

.....

.....

.....

Extended learning question:

Compare and contrast eukaryotic and prokaryotic cell types using appropriate key terms

.....

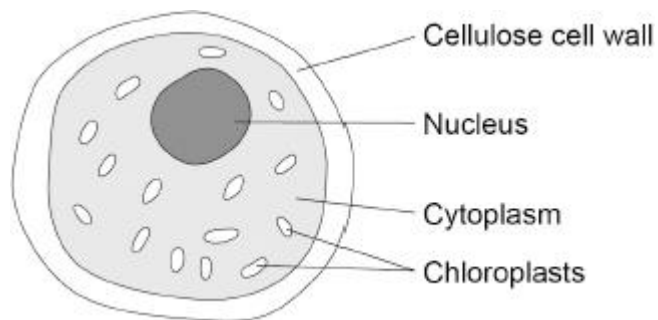
.....

.....

.....

Figure 2 shows an algal cell.

Figure 2



(b) What is the function of the cell wall?

Tick (✓) **one** box.

To contain the genetic material

To stop the chloroplasts leaking out

To strengthen the cell

(1)

(c) The algal cell is green.

Which part of the algal cell makes it green in colour?

Tick (✓) **one** box.

Cellulose

Chloroplast

Cytoplasm

Nucleus

(1)

(d) Cells contain sub-cellular structures.

Draw **one** line from each structure to its function.

Structure	Function
<input type="checkbox"/>	Controls transport of substances into the cell
Cell membrane	<input type="checkbox"/>
<input type="checkbox"/>	Where energy is released
Mitochondria	<input type="checkbox"/>
<input type="checkbox"/>	Where glucose is made
<input type="checkbox"/>	Where photosynthesis takes place
Ribosomes	<input type="checkbox"/>
<input type="checkbox"/>	Where proteins are made

(3)

A student prepared a microscope slide of cheek cells.

The student looked at one cell using a microscope.

Figure 3 shows the image the student saw.

Figure 3



(e) What should the student do to get a clear image?

Tick (✓) **one** box.

Adjust the focus knob

Make the light dimmer



Put water on the slide

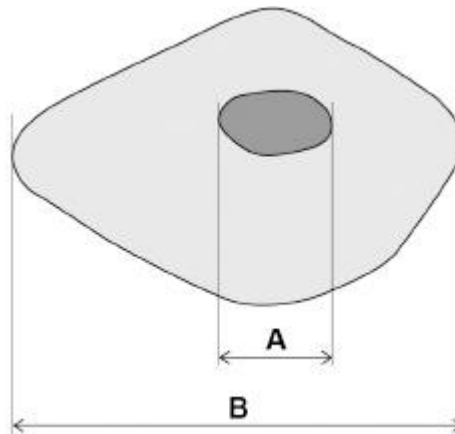


(1)

The student then obtained a clear image.

Figure 4 shows the clear image.

Figure 4



- (f) Measure the length of the nucleus (**A**) and the length of the cell (**B**) in millimetres (mm).

A = _____ mm

B = _____ mm

(2)

- (g) How many times longer is the cell (**B**) than the nucleus (**A**)?

Number of times longer = _____

(1)

- (h) The student looked at another cell.

The image width of the cell was 40 mm

The real width of the cell was 0.1 mm

Calculate the magnification of the cell.

Use the equation:

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

Magnification = \times _____

(2)

(Total 12 marks)

Mark schemes

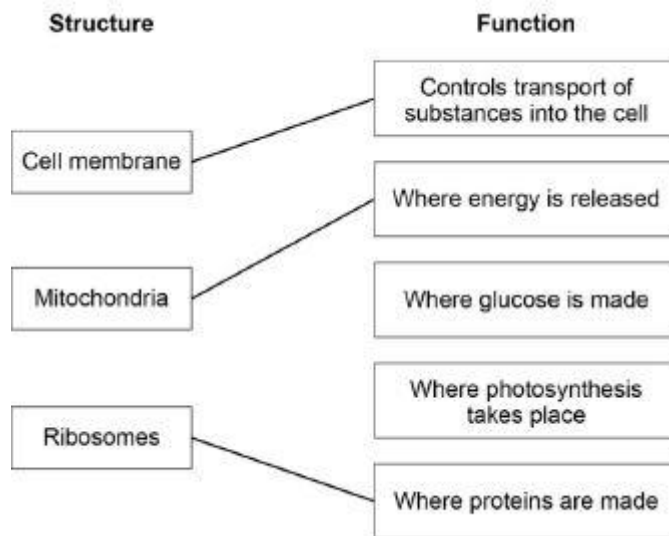
Q1.

(a) bacterium 1

(b) to strengthen the cell 1

(c) chloroplast 1

(d) 1



additional line from a box on the left negates the mark for that box 3

(e) adjust the focus knob 1

(f) (A =) 15 (mm)
allow a tolerance of ± 1mm 1

(B =) 60 (mm) 1

(g) $\frac{60}{15} = 4(.0)$
allow ecf from question (f) 1

(h) $\frac{40}{0.1}$ 1

400

do **not** accept if a unit is given

1

[12]