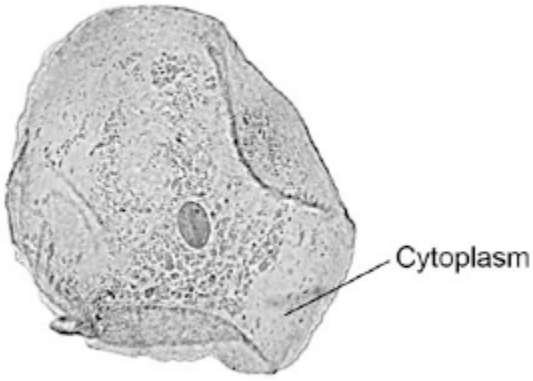
5. **Figure 1** shows a human cheek cell viewed under a light microscope.

Figure 1



(a) Label the nucleus **and** cell membrane on **Figure 1**.

(2)

(b) Cheek cells are a type of body cell.

Body cells grow through cell division.

What is the name of this type of cell division?

Tick **one** box.

Differentiation ☐

Mitosis ☐

Specialisation ☐

(1)

(c) Ribosomes and mitochondria are **not** shown in **Figure 1**.

What type of microscope is needed to see ribosomes and mitochondria?

_____

(1)

(d) What is the advantage of using the type of microscope you named in part **(c)**?

Tick **one** box.

Cheaper ☐

Higher magnification ☐

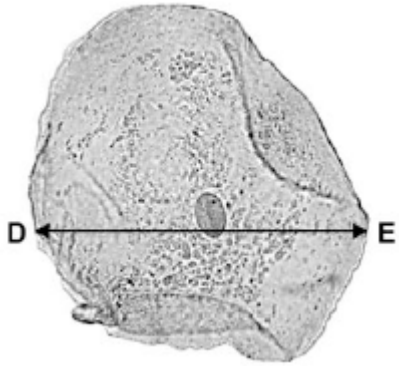
Lower resolution ☐

(1)

(e) The cheek cell in **Figure 2** is magnified 250 times.

The width of the cell is shown by the line **D** to **E**.

Figure 2



Calculate the width of the cheek cell in micrometres (µm).

Complete the following steps.

Measure the width of the cell using a ruler _____ mm

Use the equation to work out the real width of the cell in mm:

$$\textbf{real size} = \frac{\textbf{image size}}{\textbf{magnification}}$$

_____ mm

Convert mm to µm _____ µm

(3)

(f) A red blood cell is 8 µm in diameter.

A bacterial cell is 40 times smaller.

Calculate the diameter of the bacterial cell.

Tick **one** box.

0.02 µm ☐

0.2 µm ☐

2.0 µm ☐

20.0 µm ☐

(1)

(Total 9 marks)