Calculating scale
3cm : 6·7μm
3cm : 0·00067cm
1 : 0·000223

Marks

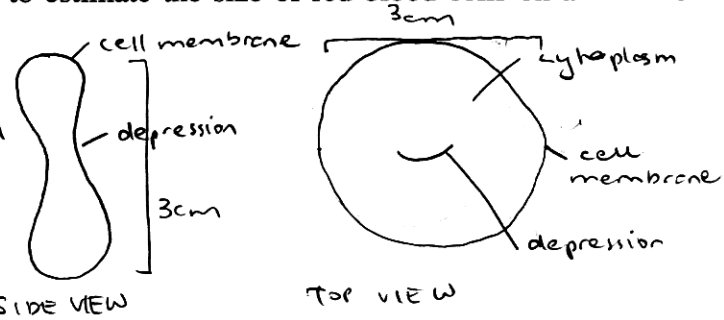
Question 21 (8 marks)

Describe a first-hand investigation used to estimate the size of red blood cells on a prepared microscope slide. **8**

SCALE: 1cm on diagram = 0·00023 cm for blood cell

In your description include:

- a list of equipment used;
- a safety precaution needed;
- the step-by-step method used;
- a scaled diagram of a red blood cell.



Equipment: prepared microscope slide, paper and pencil - microscope, 'mm' square measuring slip, calculator, ruler

Safety precaution: Switch off light before unplugging and power point before pulling the microscope plug from the power point. This avoids electrocution.

Method: Plug microscope to powerpoint and place on low power. Take the 'millimetre' square and place on microscope. Count how many of the squares can be seen through low power. This is done to measure the low power field of view. For example, if 1·6 squares can be seen, then power of view is 1·6mm or 1600μm. Convert this to a high power field of view by dividing by 4. (eg. 1600 ÷ 4 = 400μm) Take the prepared microscope slide of red blood cells and view under high power. Count how many red blood cells can be seen in the diameter of the lens. Eg: If 60 red blood cells are counted, then each red blood cell will have a diameter of $\frac{400}{60}$ = approx. 6·7μm. Draw a clearly labelled diagram of one of the red blood cells. (above)