MAGNIFICATION

1

Fig. 2.2 shows some liver cells as seen with a light microscope.

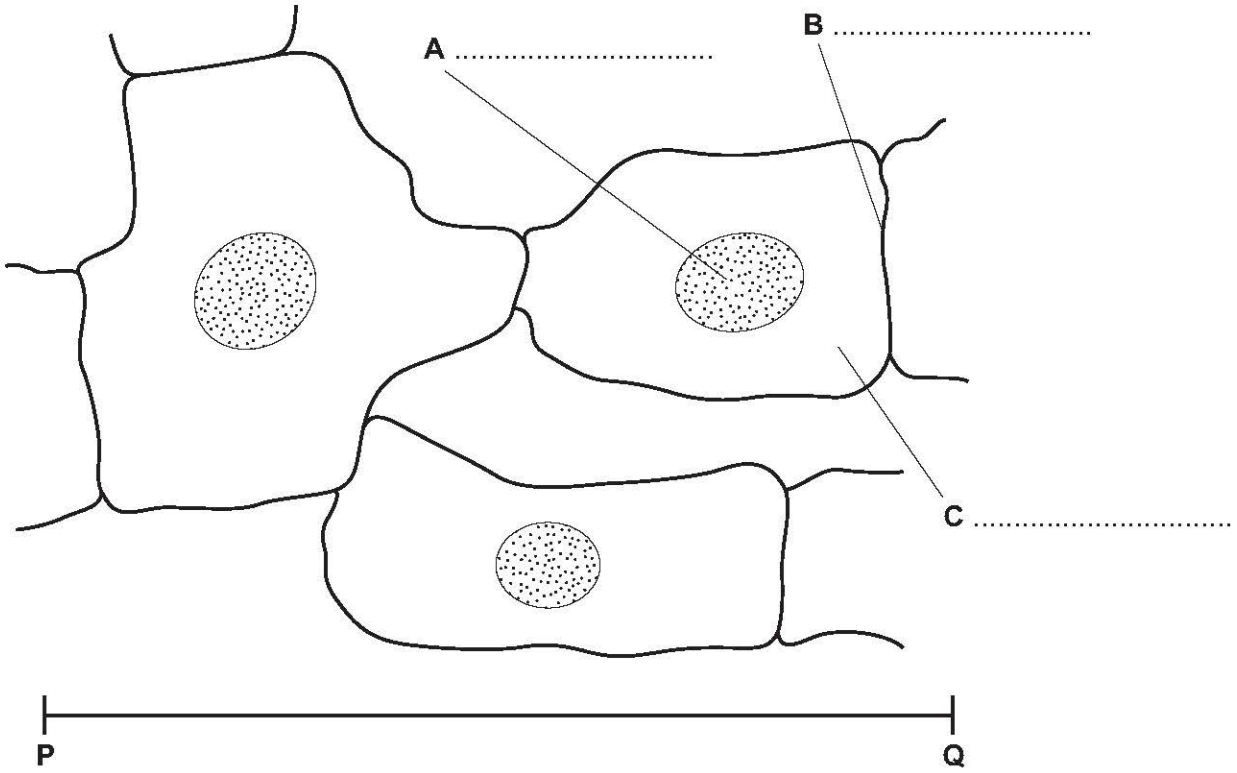


Fig. 2.2

2 **(b)** **(i)** Label, on Fig. 2.2, the structures **A**, **B** and **C**.

[3]

(ii) The distance **P-Q** is 0.06 mm.

Calculate the magnification of Fig. 2.2.

Show your working.

Magnification = x ..... [2]

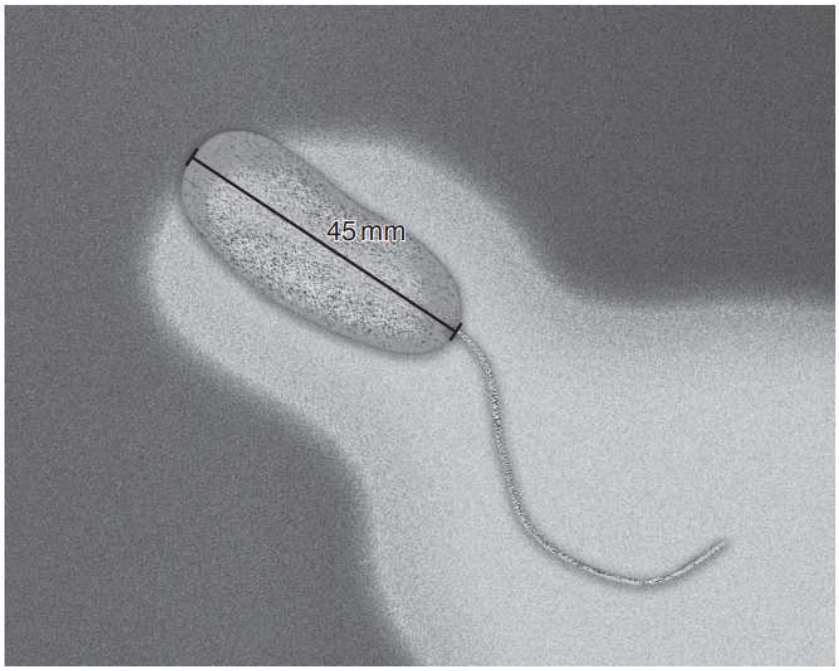
(i) *answers may be in space below question*
A – nucleus ;
B – cell / plasma, membrane ; **A** plasmalemma
C – cytoplasm ; **[3]**

(ii) *award two marks if correct answer (between 1983 – 2017) is given, ignore units*
award one mark if incorrect measurement is divided by 0.06
allow +/- 1 mm in reading the line

120 (mm) / 0.06 (mm) 12 (cm) / 0.006 (cm)
2000 ;; **A** 1983 – 2017 **[2]**

2

(c) Fig. 1.3 is a photomicrograph of *Vibrio cholerae*, the bacterium that causes cholera.



magnification ×17 300

Fig. 1.3

(i) Write the formula that would be used to calculate the actual length of the bacterium (not including the flagellum) in Fig. 1.3.

[1]

(ii) The actual length of the bacterium shown in Fig. 1.3 is 0.0026 mm.

Convert this value to micrometres (μm).

Space for working.

..... μm [1]

MARKING SCHEME

)(i)	(actual length of bacterium) = size / length, of the image ÷ magnification ;	1	
(ii)	2.6 (μm) ;	1	