

Size of specimens: practice questions

5 questions • 11 marks • mark scheme at the back

For Cambridge IGCSE Combined Science 0653. **Supplement** is Extended content, only examined on Papers 2 and 4.

Name

Total / 11

1 Which formula is used to calculate magnification? **[1 mark]**

- A. ☐ actual size $\div$ image size
- B. ☐ image size $\times$ actual size
- C. ☐ image size $-$ actual size
- D. ☐ image size $\div$ actual size

2 A drawing of a root hair cell is 48 mm long. The actual length of the cell is 0.24 mm. **[2 marks]**
Calculate the magnification of the drawing.

Answer =

3 A photograph of a cell has a magnification of $\times 800$. The cell in the photograph is 24 mm **[3 marks]**
wide. Calculate the actual width of the cell in mm. Show your working.

Answer =

4

Supplement

[4 marks]

(a) Convert 0.08 mm into μm . [1] (b) A student measures a nucleus in a drawing as 12 mm. The actual width of the nucleus is 6 μm . Calculate the magnification of the drawing. [3]

Answer =

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5

The image of a cell is 60 mm wide. The magnification is $\times 200$. What is the actual width of the cell? [1 mark]

- A. ☐ 0.003 mm
- B. ☐ 3 mm
- C. ☐ 0.3 mm
- D. ☐ 12 000 mm

Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [1]

D D (1)

2. [2]

- $48 \div 0.24$ (1)
- $\times 200$ (1) correct answer with no working gets 2 marks; ignore $\times$ sign; reject units (e.g. 200 mm)

3. [3]

- actual size = image size $\div$ magnification (1)
- $24 \div 800$ (1)
- 0.03 mm (1) correct answer with no working gets 3 marks

4. [4] **Supplement**

- (a) $80 \mu\text{m}$ (1)
- (b) convert 12 mm to 12 000 μm , or 6 μm to 0.006 mm (1)
- $12\,000 \div 6$ or $12 \div 0.006$ (1)
- $\times 2000$ (1) correct answer with no working gets 3 marks; reject units

5. [1]

C C (0.3 mm) (1)