

Foundation Separate version — Higher Tier (★) questions removed.

**Q1. Write the formula for calculating magnification.**

[1 mark]

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**Q2. A cell image is 45 mm long at  $\times 300$  magnification. (a) Calculate the actual cell length in mm. (b) Convert this to  $\mu\text{m}$ .**

[3 marks]

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**Q3. Describe how to prepare a slide of onion cells for viewing under a light microscope.**

[3 marks]

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**Total: 7 marks**

**Q1 (1 mark)**

Write the formula for calculating magnification.

- Magnification = Image size  $\div$  Actual size [1]

**Q2 (3 marks)**

A cell image is 45 mm long at  $\times 300$  magnification. (a) Calculate the actual cell length in ...

- (a) Actual size =  $45 \div 300 = 0.15$  mm [1]
- (b)  $0.15$  mm  $\times 1000 = 150$   $\mu\text{m}$  [1]
- Units stated correctly in both answers [1]

**Q3 (3 marks)**

Describe how to prepare a slide of onion cells for viewing under a light microscope.

- Cut a thin section of onion epidermis / peel a single layer [1]
- Place on a glass slide with a drop of water / iodine stain [1]
- Carefully lower a coverslip at  $45^\circ$  to avoid air bubbles [1]