

# Cells, microscopy and transport

Classroom assessment · page 1 of 3 · 24 marks in total

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Full paper: 25 minutes in a separate slot. In W7L3, answer Q2, Q3 and Q5 only in the 10-minute Independent Task. Use your agreed access arrangements.

Original teaching questions, not an official exam-board paper or a grade predictor.

## 1. Cells and their jobs [4 marks]

**Name the cell structure that controls what enters and leaves a cell.**

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**State the function of the nucleus.**

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**Explain how a sperm cell's tail helps its function.**

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## 2. Magnification [4 marks]

**An image of a cell measures 25 mm. Its actual length is 50  $\mu\text{m}$ . Calculate the magnification. Show your working.**

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## 3. Diffusion [3 marks]

In equal-volume regions, oxygen concentration is higher outside a cell than inside. Explain its initial net movement into the cell.

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## 4. Osmosis data [5 marks]

A potato cylinder starts at 4.00 g and ends at 3.60 g. Calculate percentage change in mass.

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The surrounding solution is more concentrated than the solution in the potato cells. Explain the mass change.

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## 5. Active transport [4 marks]

A root hair cell takes in mineral ions when their concentration is lower in soil water than inside the cell. Explain how it can do this.

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## 6. Evaluate a method [4 marks]

A class investigates the effect of sucrose concentration on potato mass. Some cylinders are not blotted and only one is used at each concentration. Explain one improvement for each issue and justify it.

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