

Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B1 Cell Biology

Name of the Student: _____

Max. Marks : 24 Marks

Time : 24 Minutes

Mark Schemes

Q1.

- (a) to control for the starting mass (of the pieces of carrot)
allow because the pieces of carrot were not all the same mass at the start
*do **not** accept were not all the same size*
*do **not** accept as a control variable*

1

- (b) suitable scale **and** label for y-axis
allow 5 or 6 per 2 cm
*do **not** accept 5 per 1 cm*

1

all points plotted correctly
allow $\pm \frac{1}{2}$ a square
*allow **1** mark for 4 correct points*

2

line of best fit

conc. ...	percentage (%) change...
0.0	+24
0.2	+12
0.4	+1
0.6	-8
0.8	-15

1

- (c) value from student's line of best fit
allow $\pm \frac{1}{2}$ a square

1

- (d) mass decreased

1

(due to) **loss of water by osmosis**
ignore diffusion

1

through a partially / selectively / semi permeable membrane

1

a clear reference to concentration of water or concentration of sugar is required for the fourth mark

(as) concentration of sugar solution is greater than concentration of sugar (solution) inside cells / carrot

allow (as) concentration of sugar solution inside cells / carrot is lower than the concentration of sugar solution (in the tube or around the carrot)

or

(as) the concentration of water is less outside the cells / carrot than the concentration inside the cells / carrot

allow answers in terms of dilute and concentrated solutions

1

(e) the (partially permeable / cell) membrane was damaged

allow idea that cell membrane is no longer intact

or is *more* permeable / leaky

allow the membrane is denatured

ignore cells are dead

1

[11]

Q2.

- (a) transports water in the transpiration stream 1
- (b) transports dissolved sugars using translocation 1
- (c) $2/(0.1 \times 0.1)$
or
 $2/0.01$ 1
- 200
an answer of 200 scores 2 marks 1
- (d) cooler around lower surface 1
- more humid around lower surface
allow converse argument for upper surface of leaf if qualified 1
- (so) less water evaporated
allow less breeze around lower surface 1

(e)

Level 3: Relevant points (correct processes / explanations) are identified, given in detail and linked logically to form a clear account.	5-6
Level 2: Relevant points (correct processes / explanations) are identified and there are attempts at logical thinking. The resulting account is not fully clear.	3-4
Level 1: Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical thinking.	1-2
No relevant content	0
Indicative content • water is absorbed by osmosis • osmosis is a passive process, or described • water in soil is at a higher concentration than inside cell • water moves down concentration gradient • through a partially permeable membrane • phosphate ions absorbed by diffusion • diffusion is a passive process, or described • phosphate ions are in a higher concentration in soil than inside cells	

• magnesium ions are absorbed by active transport • magnesium ions are in lower concentration in soil than inside cells • magnesium ions move from an area of lower concentration to an area of higher concentration inside the cells • magnesium ions move up the concentration gradient • process requires energy • energy from respiration	
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