

CAMBRIDGE
INTERNATIONAL EXAMINATIONS

NOVEMBER 2002

INTERNATIONAL GCSE

MARK SCHEME
MAXIMUM MARK : 45
SYLLABUS/COMPONENT : 0654/5 CO-ORDINATED SCIENCES (PRACTICAL TEST)



UNIVERSITY of CAMBRIDGE
Local Examinations Syndicate

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Q1

- (a)(i) Both answers should be within 3mm of each other and less than 8cm.
Not more than 3mm on average different from SV 2
- (ii) correct calculation 1
- (iii) correctly calculated 1
- (b) Both answers should be within 3mm of each other and at least 8cm.
Not more than 3mm on average different from SV 2
- (c) (i) solution A lower water potential than potato cells
water moves out of potato by osmosis
- solution B higher water potential than potato cells/same water potential as
cells; water moves into potato by osmosis/no net movement 4
- (ii) higher water potential of soil water means water will always enter cells;
needed to ensure continuous water supply for plant/supply of minerals/
support of plant 2
- (d)(i) drawings showing more bending for chip A 1
- (ii) water makes plant cells turgid;
this gives plant rigidity 2

total 15

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Q2

- | | | |
|--------|---|---|
| (a)(i) | correct conversion to kg | 1 |
| (ii) | correct value | 1 |
| (b) | mass between limits | |
| | weighed to nearest 0.1g | 2 |
| (ii) | both temperatures to nearest 0.5 C | |
| | any drop in temperature | 2 |
| | temperature change correct 2.5g gives 6.0°C fall
3.0g gives 7.0°C fall | |
| | two marks if within 1°C
allow one if within 2°C | 2 |
| (iii) | correctly calculated | 1 |
| (c) | e.g. how to read thermometers
use some lagging | 1 |
| (d) | endothermic because temperature falls | 1 |
| (e) | rise between 45 and 48 °C (TWO)
(subject to SV value)
rise 42-44 °C (ONE) | 2 |
| | description
rough details
taking water up to more than 60° C and wait to cool | 2 |

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Q3.

(b) Has five results

Good spread of temperatures

Within 10secs of SV for 35°C

Within 2 secs of SV at 65°C

All points for curve within 2 secs of curve 5

(d) Graph

Axes

Scale is sensible

Plotting correct

Acceptable curve 4

(e) Time is read correctly

Temperature is read correctly 2

(f) non linear OR temp. is up as time goes down 1

(g) use 1/time 1

(h) surround reagents in ice

repeat experiment as above 2

total 15