

NOVEMBER 2002

INTERNATIONAL GCSE

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



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

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

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