

**NOVEMBER 2002**

**INTERNATIONAL GCSE**

**MARK SCHEME**

**MAXIMUM MARK : 45**

**SYLLABUS/COMPONENT : 0654/5**

**CO-ORDINATED SCIENCES  
(PRACTICAL TEST)**



Page 1	Mark Scheme	Syllabus	Paper
	IGCSE Examinations – November 2002	0654	5

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

Page 2	Mark Scheme	Syllabus	Paper
	IGCSE Examinations – November 2002	0654	5

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<br>3.0g gives 7.0°C fall           |   |
|        | two marks if within 1°C<br>allow one if within 2°C                                  | 2 |
| (iii)  | correctly calculated  | 1 |
| (c)    | e.g. how to read thermometers<br>use some lagging                                   | 1 |
| (d)    | endothermic because temperature falls   | 1 |
| (e)    | rise between 45 and 48 °C (TWO)<br>(subject to SV value)<br>rise 42-44 °C (ONE)     | 2 |
|        | description<br>rough details<br>taking water up to more than 60° C and wait to cool | 2 |

<b>Page 3</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>IGCSE Examinations – November 2002</b>	<b>0654</b>	<b>5</b>

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