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

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 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 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