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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

**MARK SCHEME for the October/November 2010 question paper
for the guidance of teachers**

0610 BIOLOGY

0610/53

Paper 5 (Practical Test), maximum raw mark 40

Mark schemes must be read in conjunction with the question papers and the report on the examination.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the October/November 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2010	0610	53

Question	Mark scheme					Additional guidance A. = accept, R. = reject, I. = ignore.
1 (a) (i)		W1 – 3 weeks	W2 – 1 week	W3 – fresh	[3]	Check Supervisor’s report for details of apples provided. [1] appearance in each box; [2] texture in each box; [3] difference in each row;
	<i>appearance</i>	wrinkled skin / smaller than the other two apples / more coloured / AW	few wrinkles / larger / less coloured / AW	no wrinkles / largest of the apples / more green / AW		
	<i>texture</i>	softest / AW	slightly soft / AW	firm / AW		
(ii)	W1 wrinkled skin / smaller / more coloured / softest in texture;				[1]	Check Supervisor’s report.
(b) (i)	starch ... test / dip into iodine solution; expected colour change; reducing sugar ... make solution / extract of sample; add Benedict’s solution; heat; expected colour change; ONE safety feature;				[max 4]	Max 3 for reducing sugars. A. water-bath / lab. coat / tongs / etc. I. gloves
(ii)	test	W1 – 3 weeks / older	W2 – 1 week	W3 – fresh	[5]	Check Supervisor’s report. Observations in (b)(ii) All boxes completed = 5 Wrong colour or blank box –1.
	<i>starch</i>	brown;	some black areas;	more black areas;		
	<i>reducing sugar</i>	orange / red;	orange;	yellow;		
(iii)	deduction for starch; deduction for reducing sugar; comparison with storage time as fruit ripens / no difference;				[3]	Deductions in (b)(iii) based on candidate’s observations.

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	IGCSE – October/November 2010	0610	53

Question	Mark scheme		Additional guidance A. = accept, R. = reject, I. = ignore.																					
(c) (i)	<table><tr><th>time / days</th><th>mass of apples – not wrapped / g</th><th>loss in mass / g</th></tr><tr><td></td><td></td><td>0</td></tr><tr><td></td><td></td><td>10.1</td></tr><tr><td></td><td></td><td>35.5</td></tr><tr><td></td><td></td><td>66.3</td></tr><tr><td></td><td></td><td>93.5</td></tr><tr><td></td><td></td><td>109.5</td></tr></table>	time / days	mass of apples – not wrapped / g	loss in mass / g			0			10.1			35.5			66.3			93.5			109.5	[1]	All correct = 1. Error carried forward for plot.
time / days	mass of apples – not wrapped / g	loss in mass / g																						
		0																						
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		35.5																						
		66.3																						
		93.5																						
		109.5																						
(ii)	A – axes orientation and labels + units; S – scale – suitable to fill more than half the grid and even; P – plot; L – line;	[4]	y-axis – loss in mass / g and x-axis – time / days To fill more than ½ the grid. Allow +/- 0.5 mm square No extrapolation. A. Ruled lines A. lines of best fit. Or smooth curve. <i>Histogram / bar chart</i> A, P and neat ruled columns which do not touch – Max 3																					
(iii)	respiration / oxidation / fermentation / evaporation / transpiration / water loss / decay / decomposition;	[1]	I. hydrolysis / osmosis / eating.																					
(iv)	1. keep in cooler conditions; 2. cover apples; 3. keep dry / well ventilated; 4. under different gases / nitrogen / carbon dioxide / less oxygen / air tight / vacuum; 5. keep separated / in smooth containers; 6. not in sunlight / shade;	[max 3]	A. keep in a refrigerator.																					
[Total: 25]																								

Page 4	Mark Scheme: Teachers' version	Syllabus	Paper
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Question	Mark scheme		Additional guidance A. = accept, R. = reject, I. = ignore.
2 (a)	Drawing: O clear outline, no heavy shading P larger size; D two valves; Label: hinge / shell / exoskeleton / ligament;	[4]	Oyster, freshwater mussel, mussel, clam etc. I. thick wall / coat / testa.
(b)	Protective / camouflage; hard / tough / rigid; from predators / being eaten / prevent drying out / pressure or waves or depth of water;	[max 2]	
(c) (i)	mollusc;	[1]	Accept reasonable spelling
(ii)	length in Fig. 2.1 – 38 to 41 mm; scale line is 25 mm = 0.5 cm – 1/5th or ÷ 5; actual size;	[3]	Check if within range A. in range 7.4 to 8.2 mm
(d)	animal tube: colour – <u>yellow</u> – (acidic); explanation – CO ₂ / high CO ₂ / carbonic acid; from respiration; waterweed tube: colour – <u>purple</u> – (alkaline); explanation – low CO ₂ / CO ₂ used up / taken in / AW; by photosynthesis;	[max 5]	Independent marking. Some Centres used universal indicator. Acid – red Alkaline – blue / purple. 2 marks for colour in each 3 marks for explanation.
[Total: 15]			