

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.



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	IGCSE – October/November 2010	0610	53

Question	Mark scheme				Additional guidance A. = accept, R. = reject, I. = ignore.
1 (a) (i)		<b>W1</b> – 3 weeks	<b>W2</b> – 1 week	<b>W3</b> – fresh	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	
	[3]				
(ii)	<b>W1</b> wrinkled skin / smaller / more coloured / softest in texture;				Check Supervisor's report.  [1]
(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; <b>ONE</b> safety feature;				Max 3 for reducing sugars.  <b>A.</b> water-bath / lab. coat / tongs / etc. <b>I.</b> gloves  [max 4]
(ii)	test	<b>W1</b> – 3 weeks / older	<b>W2</b> – 1 week	<b>W3</b> – fresh	Check Supervisor's report. Observations in <b>(b)(ii)</b>  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;	
	[5]				
(iii)	deduction for starch; deduction for reducing sugar; comparison with storage time as fruit ripens / no difference;				Deductions in <b>(b)(iii)</b> based on candidate's observations.  [3]

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Question	Mark scheme				Additional guidance A. = accept, R. = reject, I. = ignore.
(c) (i)	time / days	mass of apples – not wrapped / g	loss in mass / g	[1]	All correct = 1. Error carried forward for plot.
			0		
			10.1		
			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. Histogram / bar chart 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]					

<b>Page 4</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	<b>Paper</b>
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Question	Mark scheme		Additional guidance A. = accept, R. = reject, I. = ignore.
<b>2 (a)</b>	Drawing: <b>O</b> clear outline, no heavy shading <b>P</b> larger size; <b>D</b> two valves; Label: hinge / shell / exoskeleton / ligament;	[4]	Oyster, freshwater mussel, mussel, clam etc.  I. thick wall / coat / testa.
<b>(b)</b>	Protective / camouflage; hard / tough / rigid; from predators / being eaten / prevent drying out / pressure or waves or depth of water;	[max 2]	
<b>(c) (i)</b>	mollusc;	[1]	Accept reasonable spelling
<b>(ii)</b>	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  <b>A.</b> in range 7.4 to 8.2 mm
<b>(d)</b>	animal tube: colour – <u>yellow</u> – (acidic); explanation – CO <sub>2</sub> / high CO <sub>2</sub> / carbonic acid; from respiration; waterweed tube: colour – <u>purple</u> – (alkaline); explanation – low CO <sub>2</sub> / CO <sub>2</sub> 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.
<b>[Total: 15]</b>			