

**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)	<table border="1"> <thead> <tr> <th></th> <th>W1 – 3 weeks</th> <th>W2 – 1 week</th> <th>W3 – fresh</th> </tr> </thead> <tbody> <tr> <td><i>appearance</i></td> <td>wrinkled skin / smaller than the other two apples / more coloured / AW</td> <td>few wrinkles / larger / less coloured / AW</td> <td>no wrinkles / largest of the apples / more green / AW</td> </tr> <tr> <td><i>texture</i></td> <td>softest / AW</td> <td>slightly soft / AW</td> <td>firm / AW</td> </tr> </tbody> </table>		W1 – 3 weeks	W2 – 1 week	W3 – fresh	<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]	Check Supervisor's report for details of apples provided.  [1] appearance in each box; [2] texture in each box; [3] difference in each row;
	W1 – 3 weeks	W2 – 1 week	W3 – fresh												
<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; <b>ONE</b> safety feature;	[max 4]	Max 3 for reducing sugars.  A. water-bath / lab. coat / tongs / etc. I. gloves												
(ii)	<table border="1"> <thead> <tr> <th>test</th> <th>W1 – 3 weeks / older</th> <th>W2 – 1 week</th> <th>W3 – fresh</th> </tr> </thead> <tbody> <tr> <td><i>starch</i></td> <td>brown;</td> <td>some black areas;</td> <td>more black areas;</td> </tr> <tr> <td><i>reducing sugar</i></td> <td>orange / red;</td> <td>orange;</td> <td>yellow;</td> </tr> </tbody> </table>	test	W1 – 3 weeks / older	W2 – 1 week	W3 – fresh	<i>starch</i>	brown;	some black areas;	more black areas;	<i>reducing sugar</i>	orange / red;	orange;	yellow;	[5]	Check Supervisor's report. Observations in <b>(b)(ii)</b>  All boxes completed = 5 Wrong colour or blank box –1.
test	W1 – 3 weeks / older	W2 – 1 week	W3 – fresh												
<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>(b)(iii)</b> based on candidate's observations.												

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Question	Mark scheme		Additional guidance A. = accept, R. = reject, I. = ignore.																					
(c) (i)	<table border="1"> <thead> <tr> <th>time / days</th> <th>mass of apples – not wrapped / g</th> <th>loss in mass / g</th> </tr> </thead> <tbody> <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> </tbody> </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																						
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(ii)	<p><b>A</b> – axes orientation and labels + units;  <b>S</b> – scale – suitable to fill more than half the grid and even;  <b>P</b> – plot;  <b>L</b> – line;</p>	[4]	<p>y-axis – loss in mass / g and x-axis – time / days  To fill more than <math>\frac{1}{2}</math> the grid.</p> <p>Allow +/- 0.5 mm square  No extrapolation. <b>A</b>. Ruled lines <b>A</b>. lines of best fit.  Or smooth curve.  <i>Histogram / bar chart</i>  <b>A, P</b> and neat ruled columns which do not touch – Max 3</p>																					
(iii)	respiration / oxidation / fermentation / evaporation / transpiration / water loss / decay / decomposition;	[1]	I. hydrolysis / osmosis / eating.																					
(iv)	<ol style="list-style-type: none"> <li>keep in cooler conditions;</li> <li>cover apples;</li> <li>keep dry / well ventilated;</li> <li>under different gases / nitrogen / carbon dioxide / less oxygen / air tight / vacuum;</li> <li>keep separated / in smooth containers;</li> <li>not in sunlight / shade;</li> </ol>	[max 3]	<b>A</b> . keep in a refrigerator.																					
<b>[Total: 25]</b>																								

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<b>Question</b>	<b>Mark scheme</b>		<b>Additional guidance</b> 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>			