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

0610/52 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.

UNIVERSITY of CAMBRIDGE
International Examinations

<table>
<tr><th>Question</th><th>Mark scheme</th><th></th><th>Additional guidance A. = accept, R. = reject, I. = ignore.</th></tr>
<tr><td>1 (a) (i)</td><td>
<table>
<tr><td></td><td>W1
– 3 weeks</td><td>W2
– 1 week</td><td>W3
– fresh</td></tr>
<tr><td>appearance</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>texture</td><td>softest / AW</td><td>slightly soft / AW</td><td>firm / AW</td></tr>
</table>
</td><td>[3]</td><td>Check Supervisor's report for details of apples provided.

[1] appearance in each box;
[2] texture in each box;
[3] difference in each row;</td></tr>
<tr><td>(ii)</td><td>W1 wrinkled skin / smaller / more coloured / softest in texture;</td><td>[1]</td><td>Check Supervisor's report.</td></tr>
<tr><td>(b) (i)</td><td>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;</td><td>[max 4]</td><td>Max 3 for reducing sugars.

A. water-bath / lab. coat / tongs / etc. I. gloves</td></tr>
<tr><td>(ii)</td><td>
<table>
<tr><td>test</td><td>W1
– 3 weeks / older</td><td>W2
– 1 week</td><td>W3
– fresh</td></tr>
<tr><td>starch</td><td>brown;</td><td>some black areas;</td><td>more black areas;</td></tr>
<tr><td>reducing sugar</td><td>orange / red;</td><td>orange;</td><td>yellow;</td></tr>
</table>
</td><td>[5]</td><td>Check Supervisor's report.
Observations in (b)(ii)

All boxes completed = 5
Wrong colour or blank box –1.</td></tr>
<tr><td>(iii)</td><td>deduction for starch;
deduction for reducing sugar;
comparison with storage time as fruit ripens / no difference;</td><td>[3]</td><td>Deductions in (b)(iii) based on candidate's observations.</td></tr>
</table>

<table>
<tr><th>Question</th><th>Mark scheme</th><th></th><th>Additional guidance A. = accept, R. = reject, I. = ignore.</th></tr>
<tr><td>(c) (i)</td><td>
<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>
</td><td>[1]</td><td>All correct = 1.
Error carried forward for plot.</td></tr>
<tr><td>(ii)</td><td>A – axes orientation and labels + units;
S – scale – suitable to fill more than half the grid and even;
P – plot;
L – line;</td><td>[4]</td><td>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</td></tr>
<tr><td>(iii)</td><td>respiration / oxidation / fermentation / evaporation / transpiration / water loss / decay / decomposition;</td><td>[1]</td><td>I. hydrolysis / osmosis / eating.</td></tr>
<tr><td>(iv)</td><td>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;</td><td>[max 3]</td><td>A. keep in a refrigerator.</td></tr>
<tr><td colspan="2">[Total: 25]</td><td></td></tr>
</table>

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]	