

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

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**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.

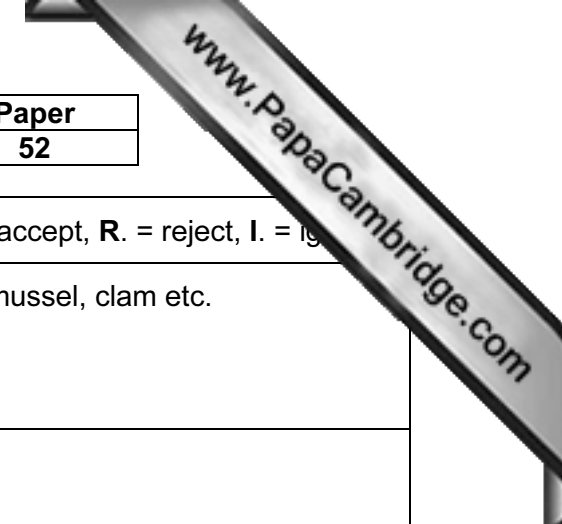
- CIE will not enter into discussions or correspondence in connection with these mark schemes.

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.

| 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; ONE 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)(ii) 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)(iii) based on candidate's observations. | | | | | | | | | | | | |

| 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 | | | | | | | | | | | | | | | | | | | | | | |
| | | 0 | | | | | | | | | | | | | | | | | | | | | | |
| | | 10.1 | | | | | | | | | | | | | | | | | | | | | | |
| | | 35.5 | | | | | | | | | | | | | | | | | | | | | | |
| | | 66.3 | | | | | | | | | | | | | | | | | | | | | | |
| | | 93.5 | | | | | | | | | | | | | | | | | | | | | | |
| | | 109.5 | | | | | | | | | | | | | | | | | | | | | | |
| (ii) | <p>A – axes orientation and labels + units; S – scale – suitable to fill more than half the grid and even; P – plot; L – line;</p> | [4] | <p>y-axis – loss in mass / g and x-axis – time / days To fill more than ½ the grid.</p> <p>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</p> | | | | | | | | | | | | | | | | | | | | | |
| (iii) | respiration / oxidation / fermentation / evaporation / transpiration / water loss / decay / decomposition; | [1] | I. hydrolysis / osmosis / eating. | | | | | | | | | | | | | | | | | | | | | |
| (iv) | <ol style="list-style-type: none"> keep in cooler conditions; cover apples; keep dry / well ventilated; under different gases / nitrogen / carbon dioxide / less oxygen / air tight / vacuum; keep separated / in smooth containers; not in sunlight / shade; | [max 3] | A. keep in a refrigerator. | | | | | | | | | | | | | | | | | | | | | |
| [Total: 25] | | | | | | | | | | | | | | | | | | | | | | | | |

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|--------|--------------------------------|----------|-------|
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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] | | | |