Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

CO-ORDINATED SCIENCES **0654/52**

Paper 5 Practical Test **October/November 2017**

MARK SCHEME

Maximum Mark: 45

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2017 series for most Cambridge IGCSE®, Cambridge International A and AS Level components and some Cambridge O Level components.

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>1(a)</td><td>quality of drawing using at least half the box ;
root correctly labelled ;
stem correctly labelled ;</td><td>3</td></tr>
<tr><td>1(b)(i)</td><td>correct measurement in mm ;</td><td>1</td></tr>
<tr><td>1(b)(ii)</td><td>correct measurement (in mm) ;</td><td>1</td></tr>
<tr><td>1(b)(iii)</td><td>magnification correctly calculated ;</td><td>1</td></tr>
<tr><td>1(c)</td><td>placed in a suitable container with water ;

kept in a warm place ;</td><td>2</td></tr>
<tr><td>1(d)(i)</td><td>Benedict’s ;</td><td>1</td></tr>
<tr><td>1(d)(ii)</td><td><table><tr><td></td><td>Benedict’s test</td><td>biuret test</td><td>iodine test</td></tr><tr><td>nutrient tested for</td><td>Reducing sugar</td><td>protein</td><td>starch</td></tr></table>
observations correct;</td><td>1</td></tr>
<tr><td>1(d)(iii)</td><td><table><tr><td>Benedict’s</td><td>biuret</td><td>iodine</td></tr><tr><td>yellow / green / orange / red ;</td><td>purple ;</td><td>blue-black ;</td></tr></table></td><td>3</td></tr>
<tr><td>1(d)(iv)</td><td>reducing sugar, protein and starch
all three = 2 marks
one or two named = 1 mark</td><td>2</td></tr>
</table>

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>2(a)(i)</td><td>neat table with appropriate headings ;
<table><tr><td>solution</td><td>observation</td></tr><tr><td>ammonium sulfate</td><td>no reaction / no ppt. ;</td></tr><tr><td>copper sulfate</td><td>blue ppt ;</td></tr><tr><td>iron(III) sulfate</td><td>brown / orange ppt ;</td></tr><tr><td>zinc sulfate</td><td>white ppt ;</td></tr></table></td><td>5</td></tr>
<tr><td>2(a)(ii)</td><td>(damp) red litmus and goes blue ;</td><td>1</td></tr>
<tr><td>2(b)(i)</td><td>different coloured ppts. / different results ;
same coloured ppts. as NaOH or ammonia ;
ammonia from ammonium (as with NaOH) / no ammonia from ammonium (unlike NaOH) ;</td><td>3</td></tr>
<tr><td>2(b)(ii)</td><td>add H to iron(II) sulfate ;</td><td>1</td></tr>
<tr><td>2(c)(i)</td><td>limewater turns milky ;</td><td>1</td></tr>
<tr><td>2(c)(ii)</td><td>carbon dioxide produced / 2(c)(i) is the test for a carbonate / sodium sulfate would not give a gas ;
H is sodium carbonate ;</td><td>2</td></tr>
<tr><td>2(c)(iii)</td><td>barium carbonate</td><td>1</td></tr>
<tr><td>2(c)(iv)</td><td>should have added dilute nitric acid or dilute hydrochloric acid before adding the barium nitrate ;</td><td>1</td></tr>
</table>

Question	Answer	Marks
3(a)(i)	θ recorded at t = 0 for 200 cm^3 ;	**1**
3(a)(ii)	for 200 cm^3 : t values correct ; all values of temperature recorded ; θ values decreasing ;	**3**
3(b)	larger change over 180 s for 100 cm^3 beaker ;	**1**
3(c)	to allow maximum temperature of hot water to be recorded / wtte ;	**1**
3(d)	axes labelled with units ; suitable choice of scales ($\geqslant$ half the grid used) ; at least 5 plots correct to half a small square (penalise 'blobs') ; good best-fit curve judgement ;	**4**
3(e)	gradient greater / graph steeper at start of experiment	**1**
3(f)	statement matching temperature changes **and** justification referring to results ; justification referring to temperature changes <u>in the same time</u> ;	**2**
3(g)	any two from: room temperature / <u>initial</u> water temperature / same volume(s) of water / keep thermometer the same depth ;;	**2**