Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

CHEMISTRY **0620/51**

Paper 5 Practical **October/November 2017**

MARK SCHEME

Maximum Mark: 40

Published

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Question	Answer	Marks
1(a)	temperature boxes completed correctly with decreasing trend shown	**1**
	results comparable to the supervisor's	**1**
1(b)	temperature boxes completed correctly with increasing trend shown	**1**
	results comparable to the supervisor's	**1**
1(c)	all points plotted	**2**
	two smooth line graphs	**1**
	both graphs appropriately labelled	**1**
1(d)(i)	value from graph	**1**
	shown clearly	**1**
1(d)(ii)	value from graph	**1**
	shown clearly	**1**
1(e)	exothermic	**1**
1(f)	room temperature / initial temperature from table **AND** reaction has finished / all the solid has dissolved	**1**

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<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>1(g)</td><td>
<table>
<tr><th>source of error</th><th>improvement</th></tr>
<tr><td>heat losses</td><td>use a lid / lag the apparatus</td></tr>
<tr><td>use of a measuring cylinder</td><td>use a pipette/burette</td></tr>
<tr><td>wet cup in the second experiment</td><td>use new/another cup OR dry the cup</td></tr>
<tr><td>the solid absorbs water from the air</td><td>store in a sealed container / airtight container / desiccator</td></tr>
<tr><td>only done once</td><td>repeat and average</td></tr>
<tr><td>different masses of solids used / masses of solids not measured</td><td>use same mass of solid / weigh the solids</td></tr>
</table>
</td><td>4</td></tr>
<tr><td>1(h)</td><td>fewer data / less detail / fewer readings / graph not as good / not enough readings taken whilst the solid is reacting</td><td>1</td></tr>
</table>

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Question	Answer	Marks
2(a)	blue (liquid)	**1**
2(b)(i)	green	**1**
	precipitate	**1**
2(b)(ii)	green solution / precipitate dissolves	**1**
2(b)(iii)	(red) litmus paper / Universal Indicator paper	**1**
	(red litmus paper) turns blue / (Universal Indicator paper) turns purple	**1**
2(c)	pH 8–11	**1**
2(d)(i)	dark / deep blue (solution)	**1**
2(d)(ii)	blue	**1**
	precipitate	**1**
2(e)	grey-green	**1**
	precipitate	**1**
2(f)	chromium	**1**
	nitrate	**1**
2(g)	ammonia / NH_3	**1**

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Question	Answer	Marks
3	*heating to dryness method* max [6]: **M1** weigh (any) sample of washing soda **M2** heat (to remove water of crystallisation) **M3** in named container **M4** cool **M5** reweigh **M6** repeat heating **M7** to constant mass **M8** appropriate calculation suggested for the percentage of water *mass of water method* max [6]: **M1** weigh (any) sample of washing soda **M2** heat to remove water of crystallisation **M3** in named container **M4** using apparatus capable of collecting water (vapour) **M5** cool / condense (water vapour) **M6** continue until no more collects **M7** weigh water **M8** appropriate calculation suggested for the percentage of water	**6**

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