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Cambridge International General Certificate of Secondary Education

CHEMISTRY

0620/53

Paper 5 Practical

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MARK SCHEME

Maximum Mark: 40

Published

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This document consists of **5** printed pages.



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

Question	Answer		Marks														
1(g)	<table border="1"> <thead> <tr> <th data-bbox="412 218 1055 268">source of error</th> <th data-bbox="1055 218 1861 268">improvement</th> </tr> </thead> <tbody> <tr> <td data-bbox="412 268 1055 317">heat losses</td> <td data-bbox="1055 268 1861 317">use a lid / lag the apparatus</td> </tr> <tr> <td data-bbox="412 317 1055 367">use of a measuring cylinder</td> <td data-bbox="1055 317 1861 367">use a pipette/burette</td> </tr> <tr> <td data-bbox="412 367 1055 416">wet cup in the second experiment</td> <td data-bbox="1055 367 1861 416">use new/another cup OR dry the cup</td> </tr> <tr> <td data-bbox="412 416 1055 466">the solid absorbs water from the air</td> <td data-bbox="1055 416 1861 466">store in a sealed container / airtight container / desiccator</td> </tr> <tr> <td data-bbox="412 466 1055 515">only done once</td> <td data-bbox="1055 466 1861 515">repeat and average</td> </tr> <tr> <td data-bbox="412 515 1055 603">different masses of solids used / masses of solids not measured</td> <td data-bbox="1055 515 1861 603">use same mass of solid / weigh the solids</td> </tr> </tbody> </table>		source of error	improvement	heat losses	use a lid / lag the apparatus	use of a measuring cylinder	use a pipette/burette	wet cup in the second experiment	use new/another cup OR dry the cup	the solid absorbs water from the air	store in a sealed container / airtight container / desiccator	only done once	repeat and average	different masses of solids used / masses of solids not measured	use same mass of solid / weigh the solids	4
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1(h)	fewer data / less detail / fewer readings / graph not as good / not enough readings taken whilst the solid is reacting		1														

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

Question	Answer	Marks
3	<p><i>heating to dryness method</i></p> <p>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</p> <p><i>mass of water method</i></p> <p>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</p>	6