
CHEMISTRY

0620/63

Paper 6 Alternative to Practical

October/November 2017

MARK SCHEME

Maximum Mark: 40

Published

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

Question	Answer	Marks
1(a)	pestle	1
	(teat) pipette	1
1(b)	to increase surface area / make it dissolve faster	1
1(c)	nitric (acid)	1
1(d)	residue	1
1(e)	M1 add a more reactive metal (e.g. zinc / magnesium)	1
	M2 displaces lead / filter out lead	1

Question	Answer	Marks
2(a)	temperature boxes completed: 23, 16, 14, 13, 12, 11, 11, 11, 11, 11 all readings correct = [2] 8 or 9 readings correct = [1]	2
2(b)	temperature boxes completed correctly: 22, 26, 29, 31, 32, 33, 34, 35, 35, 35 all readings correct = [2] 8 or 9 readings correct = [1]	2
2(c)	all points plotted	1
	two smooth line graphs (one line graph correct = [1])	2
	both graphs appropriately labelled	1
2(d)(i)	value from graph	1
	shown clearly	1

Question	Answer	Marks														
2(d)(ii)	value from graph	1														
	shown clearly	1														
2(e)	exothermic	1														
2(f)	room temperature / 22 °C AND reaction has finished / all the solid has dissolved	1														
2(g)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th data-bbox="407 545 1055 593" style="text-align: center;">source of error</th> <th data-bbox="1055 545 1856 593" style="text-align: center;">improvement</th> </tr> </thead> <tbody> <tr> <td data-bbox="407 593 1055 641" style="text-align: center;">heat losses</td> <td data-bbox="1055 593 1856 641" style="text-align: center;">use a lid / lag the apparatus</td> </tr> <tr> <td data-bbox="407 641 1055 689" style="text-align: center;">use of a measuring cylinder</td> <td data-bbox="1055 641 1856 689" style="text-align: center;">use a pipette/burette</td> </tr> <tr> <td data-bbox="407 689 1055 737" style="text-align: center;">wet cup in the second experiment</td> <td data-bbox="1055 689 1856 737" style="text-align: center;">use new/another cup OR dry the cup</td> </tr> <tr> <td data-bbox="407 737 1055 785" style="text-align: center;">the solid absorbs water from the air</td> <td data-bbox="1055 737 1856 785" style="text-align: center;">store in a sealed container / airtight container / desiccator</td> </tr> <tr> <td data-bbox="407 785 1055 833" style="text-align: center;">only done once</td> <td data-bbox="1055 785 1856 833" style="text-align: center;">repeat and average</td> </tr> <tr> <td data-bbox="407 833 1055 928" style="text-align: center;">different masses of solids used / masses of solids not measured</td> <td data-bbox="1055 833 1856 928" style="text-align: center;">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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2(h)	fewer data / less detail / fewer readings / graph not as good / not enough readings whilst the solid is reacting	1														

Question	Answer	Marks
3(a)(i)	green	1
	precipitate	1
3(a)(ii)	green solution / precipitate dissolves	1
3(a)(iii)	bubbles / fizzing / effervescence	1
	(red) litmus paper / Universal Indicator paper	1
	(red litmus paper) turns blue / (Universal Indicator paper) turns purple	1
3(b)	ammonia / NH ₃	1
3(c)	(aqueous) ammonia / NH ₃	1

Question	Answer	Marks
4	<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