
CHEMISTRY

0620/63

Paper 6 Alternative to Practical

October/November 2017

MARK SCHEME

Maximum Mark: 40

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.

© IGCSE is a registered trademark.

This syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

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"> <thead> <tr> <th data-bbox="407 544 1055 593">source of error</th> <th data-bbox="1055 544 1856 593">improvement</th> </tr> </thead> <tbody> <tr> <td data-bbox="407 593 1055 643">heat losses</td> <td data-bbox="1055 593 1856 643">use a lid / lag the apparatus</td> </tr> <tr> <td data-bbox="407 643 1055 692">use of a measuring cylinder</td> <td data-bbox="1055 643 1856 692">use a pipette/burette</td> </tr> <tr> <td data-bbox="407 692 1055 742">wet cup in the second experiment</td> <td data-bbox="1055 692 1856 742">use new/another cup OR dry the cup</td> </tr> <tr> <td data-bbox="407 742 1055 791">the solid absorbs water from the air</td> <td data-bbox="1055 742 1856 791">store in a sealed container / airtight container / desiccator</td> </tr> <tr> <td data-bbox="407 791 1055 841">only done once</td> <td data-bbox="1055 791 1856 841">repeat and average</td> </tr> <tr> <td data-bbox="407 841 1055 932">different masses of solids used / masses of solids not measured</td> <td data-bbox="1055 841 1856 932">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
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															
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