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**CHEMISTRY**

**0620/62**

Paper 6 Alternative to Practical

**March 2017**

MARK SCHEME

Maximum Mark: 40

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**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.

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Question	Answer	Marks
1(a)	electrode(s)	1
1(b)	diagram of test-tube over either electrode	1
	containing liquid	1
1(c)	test: glowing splint result: relights	1
1(d)(i)	carbon dioxide	1
1(d)(ii)	oxygen reacted with carbon	1
1(e)	solution became more acidic / more concentrated	1
	water was broken down / electrolysed	1

Question	Answer	Marks
2(a)	initial and final readings completed correctly: 29.6; 4.1	1
	difference completed correctly: 25.5	1
2(b)	initial and final readings and difference completed correctly: 29.1; 24.0; 5.1	1
	all readings to 1 d.p.	1
2(c)	neutralisation	1
2(d)(i)	solution <b>O</b>	1
	greater volume of acid was used in the titration	1

Question	Answer	Marks
2(d)(ii)	five times as concentrated	1
2(e)	2.5–2.6	1
	unit: cm <sup>3</sup>	1
2(f)	effect on volume: no effect	1
	reason: temperature would only affect the rate	1
2(g)(i)	use a pipette / burette	1
2(g)(ii)	repeat experiments (and compare / average)	1
2(h)	<b>M1 fair test</b> to equal volumes of each sodium hydroxide solution / solutions <b>O</b> and <b>P</b> add an equal volume / measured volumes of aqueous calcium chloride	1
	<b>M2 dependent variable measured</b> measure mass / height of precipitate formed / volume of calcium chloride used	1
	<b>M3 conclusion</b> the more concentrated sodium hydroxide solution would form the most precipitate (mass / height) / would require a smaller volume of calcium chloride	1

Question	Answer	Marks
3(a)(i)	white	1
	precipitate	1
3(a)(ii)	(white precipitate) dissolves	1
3(b)(i)	white precipitate	1
3(b)(ii)	(white precipitate) dissolves	1
3(c)	cream	1
	precipitate	1
3(d)	sodium	1
	iodide	1

Question	Answer	Marks
4(a)	any 4 from: <b>M1</b> measure initial temperature of (solid) ammonium chloride / barium hydroxide <b>M2</b> add barium hydroxide / ammonium chloride / other solid <b>AND</b> mix / stir <b>M3</b> use a thermometer <b>M4</b> measure the temperature of the mixture / final temperature <b>M5</b> temperature decreases / test-tube feels cold	4
4(b)	<b>M1</b> add (aqueous) sodium hydroxide (and warm)	1
	<b>M2</b> gas produced turns (red) litmus blue	1