



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CHEMISTRY

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Paper 6 Alternative to Practical

March 2017

MARK SCHEME

Maximum Mark: 40

Published

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This document consists of **4** printed pages.

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 O	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 ³	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)	M1 fair test to equal volumes of each sodium hydroxide solution / solutions O and P add an equal volume / measured volumes of aqueous calcium chloride	1
	M2 dependent variable measured measure mass / height of precipitate formed / volume of calcium chloride used	1
	M3 conclusion 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: M1 measure initial temperature of (solid) ammonium chloride / barium hydroxide M2 add barium hydroxide / ammonium chloride / other solid AND mix / stir M3 use a thermometer M4 measure the temperature of the mixture / final temperature M5 temperature decreases / test-tube feels cold	4
4(b)	M1 add (aqueous) sodium hydroxide (and warm)	1
	M2 gas produced turns (red) litmus blue	1