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**CHEMISTRY**

**0620/63**

Paper 6 Alternative to Practical

**May/June 2017**

MARK SCHEME

Maximum Mark: 40

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**Published**

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

Question	Answer	Marks
1(a)(i)	(delivery) tube	1
1(a)(iii)	arrow beneath the tube containing the mixture of alcohols	1
1(b)	to cool	1
	the gas into a liquid	1
1(c)	to measure the temperature of the vapour / temperature of liquid would not be constant	1
1(d)	<b>E</b> shown on the test-tube in water bath	1
1(e)(i)	lighted splint ignites the liquid / test for water, e.g. add anhydrous copper(II) sulfate gives a negative result	1
1(e)(ii)	melting / boiling point determination	1

Question	Answer	Marks
2(a)	all volume boxes completed correctly: 0, 13, 25, 38, 48, 59, 70, 79, 88, 96	3
2(b)	origin plotted	1
	other points correctly plotted	1
	two smooth lines	1
	labelled	1
2(c)	Experiment 1	1
	more concentrated / stronger acid / the acid has a lower pH	1

Question	Answer	Marks
2(d)	volume of gas at 30 s	1
	correct calculation of rate	1
	unit: $\text{cm}^3/\text{s}$ <b>OR</b> $\text{cm}^3\text{s}^{-1}$	1
2(e)	all the magnesium will have reacted	1
2(f)	faster reaction / increased rate	1
	magnesium powder has a higher surface area	1
2(g)	advantage: easy to use / quick	1
	disadvantage: not accurate	1
2(h)	use of burette / pipette / gas syringe / weighed amount of magnesium / repeat experiment (and average) / clean the magnesium / remove oxide layer	1

Question	Answer	Marks
3(a)	chlorine	1
3(b)(i)	iron(III)	1
	hydroxide	1
3(b)(ii)	green	1
	precipitate	1
3(c)	oxygen	1
3(d)	catalyst	1
	transition element compound / manganese oxide	1

Question	Answer	Marks
4	any 6 from: <ul style="list-style-type: none"><li>• crush lumps</li><li>• pestle and mortar</li><li>• weigh cassiterite</li><li>• heat/reduce</li><li>• with carbon/CO/more reactive metal, e.g. Zn</li><li>• weigh tin</li><li>• <math>(\text{mass of tin} / \text{initial mass}) \times 100 (\%)</math></li></ul>	6