Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CHEMISTRY **0620/62**

Paper 6 Alternative to Practical **May/June 2017**

MARK SCHEME

Maximum Mark: 40

Published

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Question	Answer	Marks
1(a)	measuring cylinder	**1**
	conical flask	**1**
1(b)	bubbles / fizz / effervescence	**1**
1(c)	time (taken)	**1**
	s / seconds / secs	**1**
1(d)(i)	80 and 40 (cm^3)	**1**
	Experiment 1 at twice / double the volume of Experiment 2	**1**
1(d)(ii)	two times as much / mass / amount / length magnesium used (in Experiment 1)	**1**
1(d)(iii)	curve drawn is steeper than Experiment1	**1**
	curve drawn finishes at the same level as Experiment 1	**1**

Question	Answer	Marks
2(a)	initial volume completed correctly: 0.0 final volume completed correctly: 13.0	**1**
	difference: 13.0	**1**
2(b)	final volume, initial volume and difference completed correctly: 41.1, 2.1 and 39.0	**1**
	all readings in **(a)** and **(b)** to 1 d.p.	**1**
2(c)	there is a colour change at the end-point already	**1**
2(d)(i)	solution **C**	**1**
	a greater volume of potassium manganate(VII) / solution **A** was needed	**1**

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Question	Answer	Marks
2(d)(ii)	3 × as concentrated	**1**
2(e)(i)	double the volume of solution **C** was used / double the volume of solution **A** was needed	**1**
	78 cm^3	**1**
2(e)(ii)	problem: volume of potassium manganate(VII) solution added would be greater than 50 cm^3	**1**
	solution: use more than one burette / refill burette	**1**
2(f)	advantage: easy (to use) / quick	**1**
	disadvantage: not accurate	**1**
2(g)	can take average or mean / can spot anomalies / more reliable	**1**

Question	Answer	Marks
3(a)	initial temperature and final temperature recorded correctly: 19, 23	**1**
	temperature difference correctly calculated: 4	**1**
3(b)	endothermic	**1**
3(c)	sulfur dioxide	**1**
3(d)	sodium / Na^+	**1**
	sulfite / SO_3^{2-}	**1**
3(e)	red	**1**
3(f)	white	**1**
	precipitate	**1**

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Question	Answer	Marks
4		**6**
	the filtration method any 6 from: weigh mixture (of calcium carbonate and kaolinite) add (dilute) hydrochloric acid in excess / continue adding until there is no more fizzing / add until no more gas is evolved filter wash residue / kaolinite dry weigh residue / kaolinite (change in mass / initial mass) · 100 (%)	
	the gas collection / loss of mass method any 6 from: weigh mixture (of calcium carbonate and kaolinite) add (dilute) hydrochloric acid in excess / continue adding until there is no more fizzing / add until no more gas is evolved collect gas in a syringe / measure final total mass measure volume of gas / mass loss calculate moles of $CaCO_3$ / CO_2 calculate mass of $CaCO_3$ (mass of $CaCO_3$ / initial mass) · 100 (%)	
	the calcium chloride method any 4 from: weigh mixture (of calcium carbonate and kaolinite) add (dilute) hydrochloric acid in excess / continue adding until there is no more fizzing / add until no more gas is evolved filter	**1**

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