Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CHEMISTRY **0620/52**

Paper 5 Practical Test **May/June 2017**

MARK SCHEME

Maximum Mark: 40

Published

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Question	Answer	Marks
1(a)	initial volume, final volume and difference completed correctly	**1**
	difference comparable to the Supervisor's result	**1**
1(b)	initial volume, final volume and difference completed correctly	**1**
	all readings in both tables in **(a)** and **(b)** to 1 d.p.	**1**
1(c)(i)	pink / purple / violet to colourless / pale green	**1**
1(c)(ii)	there is a colour change at the end-point already	**1**
1(d)(i)	solution **C**	**1**
	a greater volume of potassium manganate(VII) / solution **A** was needed	**1**
1(d)(ii)	ratio of the candidate's differences from the tables in **(a)** and **(b)**	**1**
1(e)(i)	2 × value from the table in **(b)**	**1**
	double the volume of solution **C** was used / double the volume of solution **A** was needed	**1**
1(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**
1(f)	advantage: easy (to use) / quick	**1**
	disadvantage: not accurate	**1**

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Question	Answer	Marks
2(a)	yellow	**1**
2(b)	initial and final temperatures recorded	**1**
	temperature difference correctly calculated	**1**
2(c)	any 3 from: • (pale) yellow • precipitate • potassium manganate(VII) turns colourless	**3**
2(d)	no reaction / no change	**1**
2(e)(i)	any 2 from: • brown • turns blue-black • white precipitate	**2**
2(e)(ii)	blue-black colour disappears / turns colourless	**1**
	white	**1**
2(f)	sodium / Na^+	**1**
	sulfite / SO_3^{2-}	**1**
2(g)	red	**1**
2(h)	white	**1**
	precipitate	**1**
2(i)	no reaction / no change	**1**

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Question	Answer	Marks
2(j)	lithium / Li^+	**1**
	chloride / Cl^-	**1**

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Question	Answer	Marks
3		**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	

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