Cambridge O Level

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Cambridge Ordinary Level

CHEMISTRY **5070/31**

Paper 3 Practical Test **May/June 2016**

MARK SCHEME

Maximum Mark: 40

Published

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Question	Answer	Marks
1(a)	**Titration** **Measurements (1)** Both readings i.e. initial and final are present for each titration and readings are recorded to 1dp. **Titres (1)** All the titres are calculated correctly i.e. no subtraction errors **Accuracy (6)** For each of the two best titres give: 3 marks for a titre within 0.2 cm^3 of the Supervisor's value. 2 marks for a titre within 0.3 cm^3 of the Supervisor's value. 1 mark for a titre within 0.4 cm^3 of the Supervisor's value. No marks for a titre more than 0.4 cm^3 from the Supervisor's value. **Concordance (3)** Give 3 marks if all the ticked values are within 0.2 cm^3. Give 2 marks if all the ticked values are within 0.3 cm^3. Give 1 marks if all the ticked values are within 0.4 cm^3. **Average (1)** Give 1 mark if the candidate calculates a correct average.	**12**
1(b)	Assuming a pipette volume of 25 cm^3 and the average volume of **Q** used = 25.3 cm^3 Concentration of sodium carbonate = (25.3 × 0.100) / 2 × 25.0 (1) = 0.0506 mol / dm^3 (1)	**2**
1(c)	Answer from **(b)** × 106 0.0506 × 106 = 5.36 g / dm^3	**1**
1(d)	7.85 – answer from **(c)** 7.85 – 5.36 = 2.49 g	**1**
1(e)	Value of x Mole of hydrogen peroxide = answer from **(d)** / 34 (1) 2.49 / 34 = 0.0732 Mole of hydrogen peroxide/mole of sodium carbonate (1) 0.0732 / 0.0506 = 1.45	**2**

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Question	Answer	Marks
Question 2 General points **R** is sodium sulfite **S** is potassium manganate(VII) For ppt: accept solid / suspension / powder but ignore substance / particles / deposit / residue / sediment / gelatinous / insoluble Ignore cloudy / milky / white / gelatinous solution for ppt forms Ignore solution / ppt turns colourless for ppt dissolves but accept clears for ppt dissolves For gases: to gain credit for the name of the gas produced, the test must be at least partially correct. For the evolution of a gas in a liquid accept the observation effervescence / bubbles / fizz / gas vigorously evolved but ignore gas evolved. Solutions: colourless is not equivalent to clear and clear is not equivalent to colourless No credit is given for conclusions based upon incorrect observations.		

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Question	Answer	Marks
2	**Test 1** turns colourless / decolourised (1)	**20**
	Test 2 **(a)** white ppt (1) **(b)** ppt disappears (1)	
	Test 4 **(a)** white ppt (1) **(b)** ppt disappears (1)	
	Test 5 **(a)** solution turns red (1) **(b)** solution turns yellow (1) **(c)** green ppt (1) insoluble in excess (1)	
	Test 6 turns colourless / decolourised (1)	
	Test 7 bubbles (1) relights a glowing splint (1) oxygen (1) brown ppt (1)	
	Test 8 **(a)** solution turns yellow / red / brown (1) **(b)** solution turns blue / black (1) **(c)** solution turns colourless (1)	
	Test 9 solution turns green (1) then brown (1) solid forms (1)	

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Question	Answer	Marks
2	**Conclusions** **R** is acting as a reducing agent (1) dependent on correct observation in test **1** or test **5 (c)** **S** is acting as an oxidising agent (1) dependent on an indication of iodine in test **8**	**2**

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