



Cambridge International Examinations
Cambridge Ordinary Level

CHEMISTRY

5070/31

Paper 3 Practical Test

May/June 2016

MARK SCHEME

Maximum Mark: 40

Published

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Page 2	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
1(a)	<p>Titration Measurements (1) Both readings i.e. initial and final are present for each titration and readings are recorded to 1dp.</p> <p>Titres (1) All the titres are calculated correctly i.e. no subtraction errors</p> <p>Accuracy (6) For each of the two best titres give: 3 marks for a titre within 0.2 cm³ of the Supervisor's value. 2 marks for a titre within 0.3 cm³ of the Supervisor's value. 1 mark for a titre within 0.4 cm³ of the Supervisor's value. No marks for a titre more than 0.4 cm³ from the Supervisor's value.</p> <p>Concordance (3) Give 3 marks if all the ticked values are within 0.2 cm³. Give 2 marks if all the ticked values are within 0.3 cm³. Give 1 marks if all the ticked values are within 0.4 cm³.</p> <p>Average (1) Give 1 mark if the candidate calculates a correct average.</p>	12
1(b)	<p>Assuming a pipette volume of 25 cm³ and the average volume of Q used = 25.3 cm³ Concentration of sodium carbonate = $(25.3 \times 0.100) / 2 \times 25.0$ (1) = 0.0506 mol/dm³ (1)</p>	2
1(c)	<p>Answer from (b) $\times 106$ 0.0506×106 = 5.36 g/dm³</p>	1
1(d)	<p>7.85 – answer from (c) 7.85 – 5.36 = 2.49 g</p>	1
1(e)	<p>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) $0.0732 / 0.0506 = 1.45$</p>	2

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

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

Page 5	Mark Scheme	Syllabus	Paper
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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