Cambridge O Level

Cambridge Assessment International Education
Cambridge Ordinary Level

CHEMISTRY **5070/32**

Paper 3 Practical Test **October/November 2019**

MARK SCHEME

Maximum Mark: 40

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

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GENERIC MARKING PRINCIPLE 5: Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).
GENERIC MARKING PRINCIPLE 6: Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

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Question	Answer	Marks
1(a)	Full set of data provided i.e. all initial and final temperatures recorded in table	**1**
	Temperature **readings** recorded to 0.5 °C	**1**
	Correct temperature rises recorded i.e. all subtractions correct	**1**
	Correct pattern of results (as supervisor) e.g. increase in first 4 experiments followed by little or no change i.e. within range of 2.0 °C, in remaining results	**2**
	For each temperature rise (corrected if necessary) within 1.0 °C of supervisor's result award 1 mark	**7**
1(b)	All points correctly plotted i.e. within one small square (score 1 if one incorrect, score 0 if more than 1 incorrect)	**2**
	Two intersecting straight lines – sensible use of the plotted points	**1**
1(c)	Volume of Q at the point of intersection of the two lines within 0.5 cm^3	**1**
1(d)	Concentration of sulfuric acid correctly calculated or correct working evident	**1**
	Correct answer given to 2 sf	**1**
1(e)	Reduce heat loss	**1**
1(f)	**Any two from:** Check initial temperature of acid-water mixture (is same as that of alkali) (1) Use a more precise thermometer e.g. more subdivisions on scale, reading to 0.1 °C (1) Measure the volume of water using a burette (1) Use a lid (to reduce heat loss) (1) Repeat experiments (1)	**2**

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Question	Answer	Marks
2 General points **R** is aluminium **S** is aqueous copper(II) chloride For gases: to gain credit for the name of the gas produced, the test must be at least partially correct. Solutions: colourless is not equivalent to clear and clear is not equivalent to colourless No credit is given for conclusions based upon incorrect observations.		
2(a)		**16**
Test 1	bubbles (1) gas pops with a lighted splint / burns with a pop (1) hydrogen / H_2 (1)	
Test 2	white ppt (1) soluble in excess (1) colourless solution (1)	
Test 3	white ppt (1) insoluble in excess (1)	
Test 4	gas turns (damp red) litmus blue (1) ammonia / NH_3 (1)	
Test 5	brown / red-brown solid / coating (formed) (1) blue colour fades (1)	
Test 6	white ppt (1)	

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Question	Answer	Marks
Test 7	insoluble (1)	
Test 8	ppt disappears (1) (liquid) turns deep / dark blue (1)	
2(b) Conclusions	R is aluminium (1) Cation in S is copper(II) / Cu^{2+} (1) Anion in S is chloride / Cl^- (1)	**3**