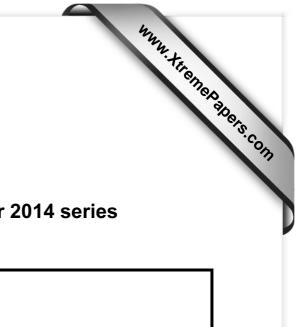
CAMBRIDGE INTERNATIONAL EXAMINATIONS Cambridge Ordinary Level



## MARK SCHEME for the October/November 2014 series

## **5070 CHEMISTRY**

5070/42

Paper 4 (Alternative to Practical), maximum raw mark 60

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.

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Ρ	age 2		Syllabus	Paper
		Cambridge O Level – October/November 2014	5070	42
1	(a)	measuring cylinder (1)		[1]
	(b)	26 (1) cm <sup>3</sup>		[1]
	(c)	(i) (turns) red (1)		[1]
		(ii) bubbles/effervescence <b>OR</b> solid dissolves/disappears/forms a solu	tion (1)	[1]
	(d)	propanol/propan-1-ol (1)		[1]
	(e)	ethyl propanoate (1) $C_2H_5COOC_2H_5$ or $C_2H_5CO_2C_2H_5(1)$		[2]
				[Total: 7]
2	(a)	hydrogen/H <sub>2</sub> <b>NOT</b> H (1) burning splint pops or pops in a flame (1)		[2]
	(b)	$Mg + 2HCl \rightarrow MgCl_2 + H_2(1)$		[1]
	(c)	final temperature 35.2		
	(-)	initial temperature 26.3 change in temperature 8.9		
		all three correct scores 2 marks; two correct scores 1 mark		[2]
	(d)	exothermic (1)		[1]
	(u)			[Total: 6]
3	(a)	limewater turns milky(1)		[1]
	(h)	heat to constant mass (1)		[4]
	(u)	heat to constant mass (1)		[1]
	(c)	(i) 0.16 (1) g		[1]
		(ii) 0.004 (1) moles		[1]
		iii) 0.004 (1) moles		[1]
		<b>iv)</b> 40 (1)		[1]
		(v) ((iv) − 16) = 24 (1)		[1]
				[Total: 7]

Ρ	age 3		llabus Paper
	(-1)		5070 42
4	(d)		[Total: 1]
5	(a) (	(1)	[Total: 1]
6	(d)	(1)	[Total: 1]
_	4.		<b>FT</b> ( 1 (1
7	(b)	(1)	[Total: 1]
8	(c) (	(1)	[Total: 1]
9	(a)	3.35 (1)g	[1]
	(1.)	ushum strip flagle (4)	[4]
	(a)	volumetric flask (1)	[1]
	(c)	(i) pipette (1)	[1]
		(ii) yellow to red/orange/pink (1)	[1]
	(d)	23.847.833.31 mark for each correct row or column0.024.310.0to the benefit of the candidate (3)	
		0.0         24.3         10.0         to the benefit of the candidate (3)           23.8         23.5         23.3	
		average volume of $0.100 \text{ mol/dm}^3 \text{ HC}l = 23.4 (1) \text{ cm}^3$	[4]
	(e)	( <b>e)</b> 0.00234 (1) moles	
	(f)	(f) $0.00117(1)$ moles	
	(')	<b>)</b> 0.00117 (1) moles	
	(g)	0.0117 (1) moles	[1]
	(h)	286 (1)	[1]
	(i)	<b>(h)</b> – 106 (1)	
	~7	$\mathbf{x} = (answer/18 =) 10 (1)$ answer need not be a whole number but may be rounded up to a whole nu	mber [2]
			[Total: 14]

[Total: 14]

Pa	age 4	4	Mark Scheme	Syllabus	Paper	
			Cambridge O Level – October/November 2014	5070	42	
10	(a)	<ul> <li>(Z is a) compound of a transition metal or transition element or Z contains transition metalions (1)</li> </ul>				
	(b)	(i)	green ppt (1)			
		(ii)	insoluble (1)			
	(c)	(i)	green ppt (1)			
		(ii)	insoluble (1)			
	<ul> <li>(d) (dilute) hydrochloric or nitric acid (1) aqueous barium chloride or nitrate (1) white ppt (1)</li> </ul>					
		Co	nclusion: The formula for ${f Z}$ is FeSO4 . (1)		[Total: 9]	
11	(a)	gas	s escapes/lost from apparatus (1)		[1]	
	(b)	to p	allow the gas/vapour to escape (1) prevent the liquid from splashing out <b>OR</b> to prevent an explosion / fla ssure build up / to release the pressure (1)	isk from burs	sting / [2]	
	(c)	two	points plotted correctly (1) smooth curves drawn (1) ves pass through all points (1)		[3]	
	(d)	(i)	0.46(5) (1) g		[1]	
		(ii)	89.55 - 89.47 (1) = 0.08 (1) g		[2]	
		(iii)	manganese (IV) oxide: graph is steeper (at the start) in experiment	t 1 (1)	[1]	
	(e)	all	the hydrogen peroxide is used up or has reacted (1)		[1]	
	(f)	89.	45 (1) g		[1]	
				I	Total: 12]	