## UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

**International General Certificate of Secondary Education** 

## MARK SCHEME for the May/June 2012 question paper for the guidance of teachers

## 0620 CHEMISTRY

0620/62

Paper 6 (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 must be read in conjunction with the question papers and the report on the examination.

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Page 2			Mark Scheme: Teachers' version	Syllabus	Paper			
				IGCSE – May/June 2012	0620	62		
1	(a)	beaker (1)						
	(b)	any through tube with (only) two open ends (1) outer tube with 'water' labelled and a way in and out (1)						
	(c)	turns revei	[2]					
	(d)	wate runs	( back [2]					
2	(a)	smoo	oth c	curve starting at origin and missing anomalous point	(1)	[1]		
	(b)	poin	it at	1.5 min/4th point/0.32g (1) ignore: 3rd point		[1]		
	(c)			finished/no more gas (1) um carbonate used up (1)		[2]		
	(d)	-		rt of sketch curve below the original/less steep (1) hal level/0.25 g (1)		[2]		
						[Total: 6]		
3	(a)	bulb/lamp lights/water level falls/green-yellow gas (1)						
	(b)	arrows labelling electrodes as anode/cathode or + – or the electrodes or Pt (1) allow: labels either way round not: the wires labelled						
	(c)	(i) I	hydro	ogen (1)		[1]		
			-	ed splint (1) if $Cl_2$ in <b>(c)(i)</b> allow ecf for damp litmus/of for anything other than $Cl_2$	ndicator paper			
		i	note:	is (1) if $Cl_2$ in <b>(c)(i)</b> allow ecf for bleached/white/deco : These are conditional marks so the result is cor it pops = $0/2$		[2] est, i.e. glowing		
	(d)	) chlorine (1) soluble/dissolves/reacts (1)						
						[Total: 7]		

	Page 3		3	Mark Scheme: Teachers' version	Syllabus	Paper
				IGCSE – May/June 2012	0620	62
4	(a)	(i) W little/no effect/slight increase (1) X no effect/(slight) decrease (1) Y speeds up reaction (1) note: The question is about rate, if candidates quote three different time difference penalise first then allow the 'correct' answers (-11s, +2s, -199s). It must be clear that the increase in rate is less for W than Y for these 2 marks.				
	(b)					
		(ii)	Y (1	)		[1]
	(c)	repeat experiments (1) take average/compare results/see if there is a difference (1)				
						[Total: 7]
5	(a)	tem	npera	ture boxes correctly completed (2) 21, 25, 26, 27, 27	7, 26, 25	[2]
	(b)	ten	npera	ature boxes completed correctly (2) 20, 19, 18, 17, 17	7, 18, 19	[2]
	(c)	all points correctly plotted (3), –1 for any incorrect smooth line graphs (2) labels (1)				[6]
	(d)	(i)	valu	ue from graph (1) allow: ±1/2 small square shown cl	early (1)	[2]
		(ii)	valu	ue from graph (1) allow: ±1/2 small square shown cl	early (1)	[2]
	(e)	enc	lothe	rmic (1) <b>ignore</b> : temperature decreases		[1]
	(f)	low	er ter	mperature (change)/halved (1) <b>ignore</b> : reference to r	rate/time	[1]
	(g)			mperature/initial temperature from table/20°C/21°C (′finished/owtte (1)	1) <b>ignore</b> : 25°C	[2]
	(h)	mo can	re rel ı spot	adings/more points (1) liable/more accurate (1) ignore: precise t anomalous points or errors (1) er graph/owtte (1)		any [2] <b>[Total: 20]</b>

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6	(d)	appearance smell	colourless (1) <b>ignore</b> : clear vinegar/pungent/sour/sharp (1) <b>ignore</b> : sweet/strong	[2]
	(e)	pH 2-6 (1)		[1]
	(f)	carbon dioxid	[1]	
	(g)	copper/Cu <sup>2+</sup> (	(1) carbonate/CO <sub>3</sub> <sup>2-</sup> (1)	[2] [Total: 6]
7	(a)	use Universa	I/pH indicator/pH meter (1) ignore: litmus/indicator	[1]
	(b)	note: This ca	n be marked via three routes.	
		heat/shake (1 until no more	e (1) Inections (1) ted measuring cylinder/graduated tube to collect gas (1)	
		heat/shake (1 until no more measure volu	d volume (1) nections (1) ted measuring cylinder/graduated tube to collect gas (1)	
		weigh the both heat/shake (1 until no more reweigh bottle	gas given off (1)	[6]
				[Total: 7]

Mark Scheme: Teachers' version IGCSE – May/June 2012

Page 4

Syllabus 0620 Paper 62