International General Certificate of Secondary Education

MARK SCHEME for the June 2005 question paper

0620 CHEMISTRY

0620/06

Paper 6 (Alternative to Practical), maximum mark 60

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which Examiners were initially instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

• CIE will not enter into discussion or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the June 2005 question papers for most IGCSE and GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.



Grade thresholds for Syllabus 0620 (Chemistry) in the June 2005 examination.

	maximum	minimum mark required for grade:				
	mark available	А	С	Е	F	
Component 6	60	48	38	27	22	

The threshold (minimum mark) for B is set halfway between those for Grades A and C. The threshold (minimum mark) for D is set halfway between those for Grades C and E. The threshold (minimum mark) for G is set as many marks below the F threshold as the E threshold is above it.

Grade A* does not exist at the level of an individual component.



June 2005

IGCSE

MARK SCHEME

MAXIMUM MARK: 60

SYLLABUS/COMPONENT: 0620/06

CHEMISTRY Alternative to Practical



Page 1	Mark Scheme	Syllabus	Paper 6			
(a) boxes	(a) boxes completed retort/clamp stand (1) (teat) pipette/dropper (1)					
	Bunsen burner (1)					
(b) hydra	tion/exothermic (1)		[1]			
(a) electr	odes correctly labelled on rods (1)		[1]			
• •	(b) bubbles at positive electrode (1), bubbles at negative electrode (1) bulb lights up/smells of bleach/greenish gas (1)					
(c) (i) c	hlorine (1)		[1]			
(ii) li	tmus/indicator (1) bleached/colourless (1)	1	[2]			
volumes f	rom syringe diagrams;					
15, 45, 61	, 73, 74, 80 and 80 all correct (4) (-1 for ea	ch incorrect)	[4]			
			[4]			
(b) volum	(b) volume of acid from graph, $10.5 \rightarrow 11.5$ (1)					
(c) volum	ne of hydrogen from graph, $29.5 ightarrow 30.5$ (1)		[1]			
table of re	table of results:					
all initial a	nd final volume boxes correctly completed 0.0, 10.6,	14.9 36.1 (3)				
difference	boxes correctly completed, 10.6, 21.2 (1)		[4]			
(a) neutra	alisation (1)		[1]			
(b) (i) e	xperiment 2 (1)		[1]			
(ii) e	xperiment 2 more/greater volume (1) x 2 (1)		[2]			
(iii) N	I more concentrated/stronger than N (1) x 2 (1)		[2]			
(c) 21.2 ((1) $cm^{3}(1)$					
twice	[3]					
(d) e.g. u	(d) e.g. use a pipette/burette instead of a measuring cylinder (1)					
(b) (i) fi	zz/bubbles (1) pops (1)		[2]			
(ii) fi	zz/bubbles (1) limewater milky (1)		[2]			
(c) weak	(1)		[1]			
	 (a) boxes (b) hydra (a) electri (b) bubbl bubl (c) (i) c (i) ii (c) (i) c (ii) ii volumes fi 15, 45, 61 (a) graph all possion (b) volum (c) volum (c) volum (d) graph all possion (ii) e (iii) e (iii) e (iii) e (iii) fi (ii) fi 	IGCSE – JUNE 2005(a) boxes completed retort/clamp stand (1) (teat) pipette/dropper (1) Bunsen burner (1)(b) hydration/exothermic (1)(a) electrodes correctly labelled on rods (1)(b) bubbles at positive electrode (1), bubbles at negative electrode bulb lights up/smells of bleach/greenish gas (1)(c) (i) chlorine (1)(ii) litmus/indicator (1)(iii) litmus/indicator (1)bleached/colourless (1)volumes from syringe diagrams;15, 45, 61, 73, 74, 80 and 80all correct (4) (-1 for each incorrect) smooth curve (1)(c) volume of acid from graph, $10.5 \rightarrow 11.5$ (1)(c) volume of acid from graph, $10.5 \rightarrow 11.5$ (1)(c) volume of hydrogen from graph, $29.5 \rightarrow 30.5$ (1)table of results:all initial and final volume boxes correctly completed 0.0, 10.6, difference boxes correctly completed, 10.6 , 21.2 (1)(ii) experiment 2 more/greater volume (1) × 2 (1)(iii) M more concentrated/stronger than N (1) × 2 (1)(c) 21.2 (1) cm ³ (1)twice as much calcium hydroxide (1)(d) e.g. use a pipette/burette instead of a measuring cylinder (1)(b) (i) fizz/bubbles (1) pops (1)	IGCSE - JUNE 20050620(a) boxes completed retort/clamp stand (1) (teat) pipette/dropper (1) Bunsen burner (1)(a)(b) hydration/exothermic (1)(a)(a) electrodes correctly labelled on rods (1)(b)(b) bubbles at positive electrode (1), bubbles at negative electrode (1) bubb lights up/smells of bleach/greenish gas (1)(c)(i) chlorine (1) (ii) litmus/indicator (1)bleached/colourless (1)volumes from syringe diagrams:15, 45, 61, 73, 74, 80 and 80all correct (4) (-1 for each incorrect)(a) graph: all points plotted correctly (3) smooth curve (1)(-1 for each incorrect)(b) volume of acid from graph, $10.5 \rightarrow 11.5$ (1) (c) volume of hydrogen from graph, $29.5 \rightarrow 30.5$ (1) table of results:all initial and final volume boxes correctly completed 0.0, 10.6, 14.9 36.1 (3) difference boxes correctly completed, 10.6, 21.2 (1)(a) neutralisation (1) 			

	Page 2		Mark Scheme			Syllabus	Paper
				IGCSE – JUNE 2005		0620	6
	(d) (i) hydrogen (1)						[1]
		(ii) carbon dioxide (1)					
	(e)	coppe	er (1) 2+ (1)				[2]
6	(a)	no/little water present/little water implied (1)					[1]
	(b) any value less than 7 (1)						[1]
	(c)	chrom	natography (1)	apply to paper (1)	use of solvent	(1)	
		descri	iption of two yell	ow spots (1)			[4]
		paper	in drink = max 2	2			
7	(a)	straigl	ht line (1)	DRAWN WITH A RUI	ER		[1]
	(b)	inaccı	curate point is at pH 5 (1) not on line (1)				
	(c)	% cor	corrosion decreases as pH increases (1)				
8	same amount/measured volume of peroxide (1)						
	add known mass of metal oxide (1)						
	time (1) measure volume of oxygen (1)						
	repeat with other oxide (1) compare/conclusion (1) [[6]	
	method will not work = 0						

Total 60