CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the May/June 2015 series

0620 CHEMISTRY

0620/63 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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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CAMBRIDGE
International Examinations

Question	Answer	Marks	Guidance
1(a)	(delivery) tube;	1	
1(b)	arrow under wool; arrow under tile;	2	
1(c)(i)	to provide large surface area;	1	**A** catalyst / increase rates
1(c)(ii)	to absorb / contain / hold the paraffin;	1	
1(d)	cracking;	1	
1(e)	bromine water would turn colourless / react with alkenes;	1	

Question	Answer	Marks	Guidance
2(a)	0, 35, 50, 57, 61, 59, 65, 65 All 8 = 3 marks 7 = 2 marks 6 = 1 mark;	3	
2(b)	all 8 points plotted within half a small square = 3 marks 7 points plotted within half a small square = 2 marks 6 points plotted within half a small square = 1 mark; best fit smooth line;	4	
2(c)(i)	at 150 s / 59 cm^3 of hydrogen;	1	
2(c)(ii)	63–65; cm^3;	2	
2(d)(i)	use a fridge / ice bath;	1	**A** freezer
2(d)(ii)	curve below original; towards same final level;	2	

Question	Answer	Marks	Guidance
3(a)	brown / red-brown / orange;	**1**	**A** black
3(b)(i)	oxygen / air used up / reacted;	**1**	
3(b)(ii)	150 – 125 = 25; 25 / 150 × 100 = 16.7%;	**2**	
3(c)	same results;	**1**	

Question	Answer	Marks	Guidance
4(e)	24, 23, 22, 25 initial temperature boxes completed correctly; 28, 59, 19, 44 maximum temperature boxes completed correctly; 4, 36, –3, 19 temperature changes completed correctly;	**3**	
4(f)	appropriate scale for y axis; all temp differences correctly plotted = 2 marks three temp differences correctly plotted = 1 mark; clearly labelled;	**4**	highest temperature at least half-way
4(g)(i)	exothermic;	**1**	**A** neutralisation
4(g)(ii)	(D is a) carbonate / carbon dioxide formed;	**1**	
4(h)	experiment 2 / solid E;	**1**	
4(i)(i)	acid neutralised / pH increased; (so solid G is a) base / alkali;	**2**	
4(j)	room temperature / initial temperature from table; reaction over;	**2**	

Question	Answer	Marks	Guidance
4(k)	temperature change lower / halved; volume of acid larger / doubled;	2	
4(l)	source: measuring cylinder / thermometer / heat losses; improvement: use burette / digital thermometer / insulate / lag;	2	

Question	Answer	Marks	Guidance
5(c)	red brown; precipitate; no change;	3	
5(d)	red brown precipitate;	1	
5(e)	no change / no precipitate / no reaction / nothing;	1	
5(f)	white; precipitate;	2	
5(g)	hydrated / water;	1	
5(h)	not a halide / not a named halide;	1	
5(i)(i)	ammonia / NH_3;	1	
5(i)(ii)	ammonium / NH_4^+;	1	

Question	Answer	Marks	Guidance
6	weighed piece of ice; melting method e.g. put into hot water; collection and measurement of gas e.g. measuring cylinder; filled with water; e.g. gas syringe (2 marks); measure volume of gas; calculate volume in 1000 g;	6	