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

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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	

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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**	

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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	

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