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Cambridge International General Certificate of Secondary Education

MARK SCHEME for the May/June 2015 series

0620 CHEMISTRY

0620/53 Paper 5 (Practical), maximum raw mark 40

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Abbreviations used in the Mark Scheme

- ; separates marking points
- / separates alternatives within a marking point
- **OR** gives alternative marking point
- **R** reject
- **I** ignore mark as if this material was not present
- **A** accept (a less than ideal answer which should be marked correct)
- **COND** indicates mark is conditional on previous marking point
- owtte or words to that effect (accept other ways of expressing the same idea)
- max indicates the maximum number of marks that can be awarded
- ecf credit a correct statement that follows a previous wrong response
- ( ) the word/phrase in brackets is not required, but sets the context
- ora or reverse argument

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Question	Answer	Marks	Guidance
1(a)	fizzing / bubbles / effervescence;	**1**	**I** 'gas made'
1(d)	red; (changes to) pink / orange / yellow / green / blue;	**2**	pH1 **A** pH goes up
1(e)	all 8 start / final temperature boxes completed; all temperature differences correct; all temperatures show to same degree of accuracy; all temperature changes with 5 °C of Supervisor's results;	**4**	
1(f)(i)	y scale – highest temperature above half way up axis **and** scale linear; all four bars correct height (two marks); bars labelled / key;	**4**	
1(g)(i)	exothermic;	**1**	**A** neutralisation
1(g)(ii)	(D is a) carbonate / carbon dioxide formed;	**1**	
1(h)	experiment 2 / solid E;	**1**	
1(i)	acid neutralised / pH increased; (so solid G is a) base / alkali;	**2**	
1(j)	room temperature / initial temperature from table; reaction over;	**2**	
1(k)	temperature change lower / halved; volume of acid larger / doubled;	**2**	

Question	Answer	Marks	Guidance
2(a)	white / yellow / brown / violet / blue / purple;	**1**	**I** qualifiers such as "pale" **R** green
2(b)	melts / dissolves / forms a liquid; condensation / droplets at top of tube **OR** steam; green / blue / purple **OR** any pH in range >7 ⩽14;	**3**	**A** description of steam produced

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Question	Answer	Marks	Guidance
2(c)	yellow / orange / brown;	1	**R** ppt
2(d)	orange / brown / rusty; precipitate / ppt / ppte; remains / does not dissolve / no change; strong / pungent / sharp smell; green / blue / purple / any pH in range 8–14;	 2 1 2	**I** the state **I** solid **A** any suitable description of the smell
2(e)	orange / brown / rusty precipitate / ppt / ppte;	1	**I** solid **R** if suggestion that precipitate redissolves
2(f)	no change / no precipitate / nothing happens / colourless;	1	**R** any indication that a change is seen
2(g)	white; precipitate / ppt / ppte;	 2	**I** solid
2(h)	hydrated / contains water; alkaline gas / ammonia (made);	 2	**R** suggestions that the solid is alkaline
2(i)	not a halide / not a named halide;	1	
2(j)	ammonium / NH_4^+; iron(III) / Fe^{3+}; sulfate / SO_4^{2-};	 3	

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