

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

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

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.

Cambridge will not enter into discussions about these mark schemes.

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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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<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Guidance</b>
1(a)	fizzing / bubbles / effervescence;	<b>1</b>	I 'gas made'
1(d)	red; (changes to) pink / orange / yellow / green / blue;	<b>2</b>	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;	<b>4</b>	
1(f)(i)	y scale – highest temperature above half way up axis <b>and</b> scale linear; all four bars correct height (two marks); bars labelled/key;	<b>4</b>	
1(g)(i)	exothermic;	<b>1</b>	A neutralisation
1(g)(ii)	(D is a) carbonate / carbon dioxide formed;	<b>1</b>	
1(h)	experiment 2 / solid E;	<b>1</b>	
1(i)	acid neutralised / pH increased; (so solid G is a) base / alkali;	<b>2</b>	
1(j)	room temperature / initial temperature from table; reaction over;	<b>2</b>	
1(k)	temperature change lower / halved; volume of acid larger / doubled;	<b>2</b>	

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

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Guidance</b>
2(c)	yellow / orange / brown;	<b>1</b>	<b>R</b> 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;	<b>2</b>  <b>1</b>  <b>2</b>	<b>I</b> the state <b>I</b> solid  <b>A</b> any suitable description of the smell
2(e)	orange / brown / rusty precipitate / ppt / ppte;	<b>1</b>	<b>I</b> solid <b>R</b> if suggestion that precipitate redissolves
2(f)	no change / no precipitate / nothing happens / colourless;	<b>1</b>	<b>R</b> any indication that a change is seen
2(g)	white; precipitate / ppt / ppte;	<b>2</b>	<b>I</b> solid
2(h)	hydrated / contains water; alkaline gas / ammonia (made);	<b>2</b>	<b>R</b> suggestions that the solid is alkaline
2(i)	not a halide / not a named halide;	<b>1</b>	
2(j)	ammonium / $\text{NH}_4^+$ ; iron(III) / $\text{Fe}^{3+}$ ; sulfate / $\text{SO}_4^{2-}$ ;	<b>3</b>	