

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International General Certificate of Secondary Education

## **MARK SCHEME for the May/June 2015 series**

### **0620 CHEMISTRY**

**0620/52**

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.

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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(f)	volumes completed for all five experiments; times completed for all five runs and time increases down table; <b>all</b> times in seconds; result for experiment 3 comparable to supervisors (within 10 seconds);	<b>4</b>	Total volume in each run = 50 cm <sup>3</sup>
1(g)	y scale – longest time above half way up axis <b>and</b> scale linear; all five points plotted correctly (two marks); smooth line;	<b>4</b>	
1(h)	yellow / cream / white;	<b>1</b>	<b>I</b> references to pale / cloudy / precipitate / solid / milky / solution
1(i)(i)	correct value from graph; units; indication shown on graph;	<b>3</b>	<b>A</b> s / seconds / sec
1(i)(ii)	line above experimental line;	<b>1</b>	the lines must <b>not</b> meet at any point
1(j)(i)	experiment 1 / first;	<b>1</b>	<b>A</b> ecf from results
1(j)(ii)	more particles of thiosulfate / particles closer together / more concentrated / no water / more (frequent) collisions ;	<b>1</b>	
1(k)	volume over 50 cm <sup>3</sup> / changing total volume; so not a fair test / so depth greater / cannot compare with other results;	<b>2</b>	<b>A</b> (result) not valid
1(l)(i)	<i>Any two from:</i> <ul style="list-style-type: none"> <li>• more accurate (for volume measurement);</li> <li>• comparison to measuring cylinder;</li> <li>• less accurate measurement of time;</li> <li>• as it takes longer to add the acid;</li> </ul>	<b>2</b>	<b>A</b> more precise
1(l)(ii)	time shorter / cross disappears faster; depth greater;	<b>2</b>	<b>R</b> reacts faster

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Guidance</b>
2(a)	white (solid);	<b>1</b>	<b>R</b> if described as a liquid or solution
2(b)	strong / pungent / sharp / choking smell; (pH indicator turns) green / blue / purple; Any value or range >7 and ≤14;	<b>3</b>	<b>A</b> any suitable description of the smell
2(c)	yellow; precipitate / ppt / ppte;	<b>2</b>	<b>I</b> cream <b>I</b> solid <b>R</b> the second mark if there is an indication of the precipitate dissolving
2(d)	yellow / orange / brown; fizzing / bubbles / effervescence; turns black / blue-black; glowing splint; relights;	<b>5</b>	<b>I</b> the state / red <b>I</b> “gas made”  <b>I</b> all other gas tests <b>A</b> glows brighter
2(e)	fizzing / bubbles / effervescence; limewater; milky / cloudy;  (on addition of sulfuric acid) white precipitate / ppt / ppte;	<b>3</b>  <b>1</b>	<b>I</b> all other gas tests <b>A</b> other description such as “becomes turbid”
2(f)	ammonium / $\text{NH}_4^+$ ; iodide / $\text{I}^-$ ;	<b>2</b>	<b>A</b> correct formula of ammonium iodide for both marks
2(g)	barium / lead / calcium / silver; carbonate;	<b>2</b>	<b>A</b> correct formula of appropriate carbonate for both marks