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Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CHEMISTRY

0620/62

Paper 6 Alternative to Practical

May/June 2016

MARK SCHEME

Maximum Mark: 40

Published

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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
1(a)	stand; beaker;	2 1 1
1(b)	arrow(s) underneath copper oxide;	1
1(c)	black; to orange / red / brown / pink;	2 1 1
1(d)	to condense (the water vapour);	1
1(e)(i)	water;	1
1(e)(ii)	test: anhydrous copper(II) sulfate; result: turns blue; OR test: cobalt(II) chloride (paper); result: turns pink;	2 1 1 1 1
1(e)(iii)	boiling / melting point determination;	1

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Question	Answer	Marks
2(a)	all 6 times completed correctly (2 marks) (22, 43, 64, 86, 105, 126) 5 times completed correctly (1 mark); in seconds;	3 2 1
2(b)	appropriate scale for y-axis / increasing at 20 s per large square; y-axis is a linear scale; all 6 points plotted correctly $\pm$ half a small square (2 marks); 5 points plotted correctly $\pm$ half a small square (1 marks); best-fit straight-line graph;	5 1 1 2 1
2(c)(i)	value from graph $\pm$ half a small square (typically 167–170); units / s; extrapolation;	3 1 1 1
2(c)(ii)	sketch line below original line and diverging;	1
2(d)	as an indicator;	1
2(e)(i)	(more) accurate;	1
2(e)(ii)	solution slow to run out of pipette; difficult to know when to start timer / reaction does not start at once / inaccurate time measurement owtte;	2 1 1
2(f)	difficulty in swirling / mixing / shaking;	1

Page 5	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
3(a)	<u>white</u> (solid / crystals / powder);	1
3(b)(i)	no change;	1
3(b)(ii)	turns from purple / pink; to colourless / white;	2 1 1
3(c)	yellow / orange (flame);	1
3(d)	ammonia / NH_3 ;	1
3(e)	ammonium / NH_4^+ ;	1

Page 6	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
4	making the salt any 4 from: - known volume sulfuric acid; - add named indicator; - add potassium hydroxide solution to the acid until the indicator changes colour/is neutralised; - note/measure the volume of potassium hydroxide solution added; - repeat without indicator OR add (decolourising) charcoal; obtaining crystals any 2 from: - heat/evaporate solution to crystallising point <u>until half evaporated</u> OR <u>until crystals (start to) form</u> OR <u>until saturated</u>; - leave to cool; - filter to get crystals; - dry crystals (on filter paper)/leave to dry;	6