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**CHEMISTRY**

**0620/63**

Paper 6 Alternative to Practical

**May/June 2016**

MARK SCHEME

Maximum Mark: 40

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**Published**

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>
1(a)	(gas) syringe;	<b>1</b>
1(b)	arrow under copper;	<b>1</b>
1(c)	orange / red / brown / pink; to black;	1 1 <b>2</b>
1(d)	volume of oxygen = 10 cm <sup>3</sup> ; % oxygen = $10/50 \times 100 = 20\%$ ;	1 1 <b>2</b>

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>
2(a)	initial temperature boxes completed correctly: 22, 21, 24; maximum temperature boxes completed correctly: 25, 23, 61; temperature differences completed correctly: 3, 2, 37;	3 1 1 1
2(b)	hydrogen;	1
2(c)	all temperature boxes completed correctly: 21, 46 and 24, 29; differences completed correctly: 25, 5;	2 1 1
2(d)	y-axis scale linear and highest temperature change over half way up y-axis; all 5 bars at the correct height; <u>bars</u> clearly labelled;	3 1 1 1
2(e)(i)	experiment <u>3</u> ;	1
2(e)(ii)	magnesium is the most reactive metal;	1
2(f)	copper formed; iron is more reactive / displacement reaction;	2 1 1
2(g)	potassium is too reactive / dangerous;	1
2(h)	quick / easy to use;	1
2(i)	insulate / lag tube / use a lid; to reduce heat losses; <b>OR</b> use a pipette / burette; instead of measuring cylinder / more accurate;	2 1 1 1 1

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Question	Answer	Marks
3(a)(i)	white; precipitate; dissolves;	3 1 1 1
3(a)(ii)	white precipitate; dissolves;	2 1 1
3(a)(iii)	no reaction / change / precipitate;	1
3(a)(iv)	any 3 from: effervescence / fizz / bubbles; red litmus / pH paper; blue / pH > 7; pungent smell;	3
3(b)	lithium; carbonate;	2 1 1

Question	Answer	Marks
4	<p><b>method</b> heat the salt; condenser shown on diagram; drops of water / condensation; colour change / blue solid becomes paler;</p> <p><b>test pure water</b> boiling point; 100 °C;</p>	6