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Cambridge International General Certificate of Secondary Education

CHEMISTRY **0620/63**

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)	(gas) syringe;	**1**
1(b)	arrow under copper;	**1**
1(c)	orange / red / brown / pink; to black;	**2** 1 1
1(d)	volume of oxygen = 10 cm^3; % oxygen = 10/50 × 100 = 20%;	**2** 1 1

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Question	Answer	Marks
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; bars clearly labelled;	**3** 1 1 1
2(e)(i)	experiment 3;	**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; **OR** 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	**method** heat the salt; condenser shown on diagram; drops of water / condensation; colour change / blue solid becomes paler; **test pure water** boiling point; 100 °C;	**6**

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