Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CHEMISTRY **0620/53**

Paper 5 Practical Test **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)	**M1** initial temperature readings and maximum temperature completed for all three experiments; **M2** temperature rises completed correctly; **M3** lowest temperature difference in Experiment 2;	**3** 1 1 1
1(b)	lighted splint pops;	**1**
1(c)	**M1** all 6 temperature boxes and differences completed correctly; **M2** temperature difference in Experiment 4 is within 5 °C of supervisor's result; **M3** observation – brown solid **OR** green solution **OR** paler solution;	**3** 1 1 1
1(d)	**M1** *y*-axis scale is linear and highest temperature change is over half-way up *y*-axis; **M2** all 5 bars drawn to the correct height; **M3** bars clearly labelled;	**3** 1 1 1
1(e)(i)	Experiment 3 / magnesium / Mg;	**1**
1(e)(ii)	magnesium is more reactive than iron and zinc;	**1**
1(f)	hydrogen;	**1**
1(g)	potassium is too reactive / dangerous / catches fire / explodes;	**1**
1(h)	quick / easy to use;	**1**
1(i)	**M1** insulate / lag tube / use a lid; **M2** to reduce heat losses; **OR** **M1** use a pipette / burette (instead of a measuring cylinder); **M2** more accurate (than a measuring cylinder);	**2** 1 1 1 1

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Question	Answer	Marks
2(a)(i)	**M1** white; **M2** precipitate; **M3** dissolves / colourless solution / solid disappears / precipitate soluble in excess;	**3** 1 1 1
2(a)(ii)	**M1** white precipitate; **M2** dissolves / colourless solution / solid disappears / precipitate soluble in excess;	**2** 1 1
2(a)(iii)	no reaction / change / precipitate;	**1**
2(a)(iv)	any 3 from: • effervescence / fizz / bubble; • red litmus / pH paper; • blue / dark green / pH > 7; • pungent / strong / sharp smell;	**3**
2(b)	**M1** zinc; **M2** nitrate;	**2** 1 1
2(c)	**M1** effervescence / bubbles / fizz; **M2** limewater; **M3** milky;	**3** 1 1 1
2(d)	red / crimson;	**1**
2(e)	**M1** lithium; **M2** carbonate;	**2** 1 1

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Question	Answer	Marks
3		**6**
	obtaining water	
	• heat the salt;	1
	• condenser shown on diagram;	1
	• drops of water / condensation / (colourless) liquid formed / collected;	1
	• colour change of salt / blue solid becomes paler / solid becomes white;	1
	testing pure water	
	• boiling point / freezing point;	1
	• 100 °C / 0 °C;	1

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