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

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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This syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

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

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

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

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