Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CHEMISTRY **0620/61**

Paper 6 Alternative to Practical **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)	fractionating column; tripod;	**2** 1 1
1(b)	water labelled twice;	**1**
1(c)	heat under (the collecting) beaker;	**1**
1(d)	**M1** ethanol; **M2** lowest / lower boiling point;	**2** 1 1
1(e)	ethanol is flammable;	**1**

Question	Answer	Marks
2(a)	final readings completed correctly: 13.2, 39.2; initial readings completed correctly: 0.0, 12.8; differences completed correctly: 13.2, 26.4; all readings and differences to 1 decimal place;	**4** 1 1 1 1
2(b)	yellow to orange / red / pink;	**1**
2(c)	initial and final readings completed correctly: 9.9, 16.5; difference completed correctly: 6.6;	**2** 1 1
2(d)	bubbles / fizzing / effervescence;	**1**
2(e)	Experiment 2;	**1**
2(f)	use a pipette / burette;	**1**
2(g)	effect on results: none owtte; reason: no change in concentration owtte;	**2** 1 1
2(h)(i)	2:1;	**1**
2(h)(ii)	acid **B** is double the concentration of acid **A** ora / acid **B** is more concentrated ora;	**1**
2(i)	any suitable correct and different method **M1** method; **M2** reagents; **M3** result;	**3** 1 1 1

Question	Answer	Marks
3(a)	sodium; bromide;	**2** 1 1
3(b)	green;	**1**
3(c)(i)	green; precipitate; with excess, green solution / clear / dissolves;	**3** 1 1 1
3(c)(ii)	grey-green; precipitate;	**2** 1 1
3(c)(iii)	white precipitate;	**1**
3(d)	fume cupboard / protective clothing, e.g. gloves or goggles;	**1**

Question	Answer	Marks
4	any 6 from: weigh calcium; with lid / cover; heat / burn; allow air to enter / lift lid; cool; reweigh CaO; reheat to constant mass; calculate / find the difference;	**6**