

CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Ordinary Level

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MARK SCHEME for the October/November 2013 series

5070 CHEMISTRY

5070/41

(Alternative to Practical), maximum raw mark 60

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.

Cambridge is publishing the mark schemes for the October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

Page 2	Mark Scheme	Syllabus	Paper
	GCE O LEVEL – October/November 2013	5070	41

- 1 (a) (i) conical flask (1) [1]
(ii) gas syringe/syringe (1) [1]
- (b) (i) 0.002 (1) [1]
(ii) 0.048(g) (1) [1]
- (c) pops in a flame/lighted splint (1) [1]
- (d) (i) greater (1) [1]
(ii) smaller (1) [1]
- [Total: 7]**
- 2 (a) (i) pink/red brown/brown/copper solid or deposit (1) [1]
(ii) $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$ (1) [1]
(iii) blue solution turns colourless/blue colour fades (1)
copper ions are removed from solution (1) [2]
(iv) oxygen (1)
glowing splint relights (1) [2]
(v) copper ions removed at cathode are replaced at anode/concentration of copper ions
remains constant/ concentration of electrolyte remains constant (1) [1]
- (b) (i) oxygen (1)
hydrogen (1)
bubbles (1)
(ii) iodine (1)
brown solution/grey or black solid (1)
hydrogen (1)
(iii) bromine (1)
brown solution/brown/red brown/orange vapour (1)
lead (1) [9]
- [Total: 16]**

Page 3	Mark Scheme	Syllabus	Paper
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- 3 (c) (1) [Total: 1]
- 4 (d) (1) [Total: 1]
- 5 (d) (1) [Total: 1]
- 6 (c) (1) [Total: 1]
- 7 (c) (1) [Total: 1]
- 8 (a) 0.81 (g) (1) [1]
- (b) pipette (1) [1]
- (c) 23.7 24.8 32.9
0.0 2.0 10.3 1 mark for each correct row or column to benefit of candidate. (3)
23.7 22.8 22.6
mean titre = 22.7 cm³ (1) [4]
- (d) 0.00227 (moles) (1) [1]
- (e) 0.00114 (moles) (1) [1]
- (f) 0.000378 (moles) (1) [1]
- (g) 0.00378 (moles) (1) [1]
- (h) 214 (1) [1]
- (i) 3 (1) [1]
- [Total: 12]

Page 4	Mark Scheme	Syllabus	Paper
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- 9 (a) (i) carbon dioxide (1)
limewater turns milky (1) [2]
- (ii) $2\text{H}^+ + \text{CO}_3^{2-} \rightarrow \text{H}_2\text{O} + \text{CO}_2$ (1) [1]
- (b) transition metal not present (1) [1]
- (c) (i) white precipitate (1)
- (ii) insoluble in excess (1)
- (d) no precipitate or slight white precipitate (1)
- (e) nitric acid (1)
and silver nitrate solution (1)
accept correct formulae. Incorrect formula negates correct name and vice versa.
white precipitate (1) [7]

[Total: 10]

- 10 (a) (i) exothermic (1) [1]
- (ii) any **TWO** from
zinc dissolves/disappears (1)
copper/brown/red brown/pink solid or deposit (1)
bubbles/fizzing/effervescence (1)
solution goes from blue to colourless or blue colour fades (1) [2]
- (b) all points plotted correctly (1)
straight line drawn (1)
line extended to y axis (1) [3]
- (c) (i) 32.4 (°C) (1) [1]
- (ii) 12.4 (°C) (1) [1]
- (iii) 0.025 (moles) (1) [1]
- (d) 52/52.08/52.1 (kJ/mol) (1) [1]

[Total: 10]