

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE O Level

MARK SCHEME for the May/June 2006 question paper

5070 CHEMISTRY

5070/04

Paper 4

maximum raw mark 60

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which Examiners were initially instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

- CIE will not enter into discussion or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the May/June 2006 question papers for most IGCSE and GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses



| Page 2 | Mark Scheme | Syllabus | Paper |
|--------|-----------------------------|----------|-------|
| | GCE O Level – May/June 2006 | 5070 | 04 |

1 A (1) [1]

2 (a) (i) To increase the speed of the electrolysis (1)

(ii) Oxygen (1) relights a glowing splint (1)

(iii) Hydrogen (1) pops in a flame (1)
(or vice versa for consequential gas tests)

(b) Twice as much gas in Y as X (1)

(c) Chlorine (1) bleaches litmus (1)
sodium – vigorous reaction, , dissolves, effervescence, gas
given off etc. (any 2 – 2 marks)
iron – no reaction (1)

[11]

3 (a) (i) cream (1)

(ii) filtration (1)

(b) (i) 0.045 (1)

(ii) 0.050 (1)

(c) 0.045×188 (1) = 8.46 g (1)

(d) 0.050×188 (1) = 9.4 g (1)

[8]

4 to 8 (b), (b), (b), (d), (b) 1 mark each

[5]

9 (a) potassium manganate(VII) cannot oxidise iron(III) or iron(III)
cannot be oxidised (1)

(b) 6.08 g (1)

(c) pipette (1)

(d) (i) green, colourless (1)

(ii) purple, pink (1)

(e)

| | | | |
|------|------|------|---|
| 26.3 | 29.4 | 47.2 | [mark rows <u>or</u> columns <u>to</u> the benefit of the candidate. One mark for each correct row or column (3)] |
| 0.0 | 3.6 | 21.6 | |
| 26.3 | 25.8 | 25.6 | |

Mean value 25.7 (1) cm³

(f) 0.000514 (1)

(g) 0.00257 (1)

(h) 0.0257 (1)

(i) 3.91 g (1)

(j) 64.25% (1)

[14]

| | | | |
|--------|-----------------------------|----------|-------|
| Page 3 | Mark Scheme | Syllabus | Paper |
| | GCE O Level – May/June 2006 | 5070 | 04 |

10 (a) colourless (1) solution

(b) (i) white ppt. (1)

(ii) soluble in excess (1)

(c) (i) white ppt. (1)

(ii) soluble in excess (1)

(d) dilute nitric acid (1)

aqueous lead(II) nitrate or aqueous silver nitrate (1)

yellow ppt. (1)

ZnI₂ (1)

[9]

11 (a) all points plotted correctly (1) smooth curve through all the points (1)

(b) 2.0 (1)

(c) 13.8 (1) indicate extension on graph back to y-axis (1)

(d) (i) 7.0 (1)

(ii) 27.0 (1) cm³

(e) (i) reduce volume or evaporate (1) allow to stand (1)
filter off the crystals (1)

(ii) Molar mass of Na₂SO₄ = 142 g (1)

Mass of Na₂SO₄ = 142 x 0.025 x 0.5 = 1.78 g.(1)

(for answers (b), (c), and (d) read the candidate's graph)

[12]