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**

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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, effervescense, 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 x 188 (1) = 8.46 g (1)

(d) 0.050 x 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 or columns to the benefit of the
0.0	3.6	21.6	candidate.
26.3	25.8	25.6	One mark for each correct row or column (3)]

Mean value 25.7 (1) cm^3

(f) 0.000514 (1)

(g) 0.00257 (1)

(h) 0.0257 (1)

(i) 3.91 g (1)

(j) 64.25% (1) **[14]**

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)

ZnI_2 (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) cm^3

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

(ii) Molar mass of Na_2SO_4 = 142 g (1)
Mass of Na_2SO_4 = 142 x 0.025 x 0.5 = 1.78 g.(1) **[12]**
(*for answers **(b)**, **(c)**, and **(d)** read the candidate's graph)*