

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)
- 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)  $0.045 \times 188 (1) = 8.46 \text{ g} (1)$
- (d)  $0.050 \times 188 (1) = 9.4 \text{ g} (1)$

[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) cm<sup>3</sup>

- (f) 0.000514 (1)
- (g) 0.00257 (1)
- (h) 0.0257 (1)
- (i) 3.91 g (1)
- (j) 64.25% (1)

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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<sub>2</sub> (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<sup>3</sup>

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

(ii) Molar mass of Na<sub>2</sub>SO<sub>4</sub> = 142 g (1)

Mass of Na<sub>2</sub>SO<sub>4</sub> = 142 x 0.025 x 0.5 = 1.78 g.(1)

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

[12]