

**MARK SCHEME for the October/November 2007 question paper**

**5070 CHEMISTRY**

**5070/04**

Paper 4 (Alternative to Practical), maximum raw mark 60

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	GCE O LEVEL – October/November 2007	5070

1 (a) B (1),

(b) pipette (1)

2 (a) hydrocarbon oil or long chain ( $> C_6$ ) or named hydrocarbon (1)  
+ porcelain etc (1) or ethanol (1) + aluminium oxide (1).

(b) ethene is insoluble in water (1).

(c) to prevent the water sucking back into the tube(1).

(d) aqueous bromine or bromine water (1)  
is decolourised by ethene (1).

[6]

3 (a) chromatography (1)

(b) B – finish line of the solvent or water (1)

(c) ink contains a number of dyes, substances or compounds (1)  
which is separated into its components or produces dots or lines (1)

(d) X – M, N, and P; Y – L and P (1) (both correct)

(e) (i)  $R_f$  value = distances travelled by substance / solvent (1)

(ii) P:  $2.5/5.5 = 0.45$  (1)

[7]

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- 4 (a) white precipitate (1).
- (b) (i) 0.02 (1)  
(ii) 0.015 (1) (reversed ½)
- (c) 3.495 (3.5) g (1)
- (d) 95.85% (95.9%)(95.7% using 3.5 g)(accept 96)(1)
- (e) product was not dried etc (1)
- (f) barium chloride, carbonate, bromide, or iodide (1)  
(not phosphate); [7]

5 to 9 (c), (a), (c), (b), (c) respectively 1 mark each correct answer. [5]

- 10 (a) 4.85 g (1)
- (b) (i) blue (1),  
(ii) filtration (1)  
(iii)  $\text{CuO} + \text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + \text{H}_2\text{O}$  (1)
- (c) (i) blue  
(ii) green or blue/green(1)
- (d)
- |      |      |      |   |
|------|------|------|---|
| 26.6 | 40.7 | 46.2 | (mark columns OR rows to benefit of candidate. 1 mark for each correct column or row) (3) |
| 0.0  | 14.6 | 19.9 |   |
| 26.6 | 26.1 | 26.3 |   |
- Mean value = 26.2 cm<sup>3</sup> (1)
- (e) 0.00262 (1)
- (f) 0.00131 (1)
- (g) 0.0131 (1)
- (h) 0.05 (1)

Page 4	Mark Scheme	Syllabus
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(i) 0.0369 (1)

(j) 0.0369 (1)

(k) (i) 2.93 g (1)

(ii) 60.4 % (1)

[17]

11 Transition metal ion present (1)  
orange (1) to green (1)  
purple (1) to colourless (1)

[5]

12 (a) temperatures: 24.5, 29, 27, 23.5. all correct (1)  
temperature rises: 4.5, 9, 7, 3.5. all correct (1)

(b) all points correctly plotted (1)  
joined by two intersecting straight lines (1)

(c) (i) 9.8 °C (1)

(ii) 56 cm<sup>3</sup> of H, 44 cm<sup>3</sup> of J both (1).

(d) moles NaOH : H<sub>2</sub>SO<sub>4</sub> = 2 : 1(1)  
Concentration of H = 0.39(3) moles/dm<sup>3</sup>  
Correct answer with working (2)

(e) (i) 4.9 °C (1)

(ii) 56/44 (1)

[11]