

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
GCE Ordinary Level

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	04

- 1 (a) B (1),
- (b) pipette (1) [2]
- 2 (a) hydrocarbon oil or long chain (> C₆) 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 $\frac{1}{2}$)

(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
0.0	14.6	19.9
26.6	26.1	26.3

(mark columns OR rows to benefit of candidate. 1 mark for each correct column or row) (3)

Mean value = 26.2 cm^3 (1)

(e) 0.00262 (1)

(f) 0.00131 (1)

(g) 0.0131 (1)

(h) 0.05 (1)

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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 cm³ of H, 44 cm³ of J both (1).

(d) moles NaOH : H₂SO₄ = 2 : 1(1)
Concentration of H = 0.39(3) moles/dm³
Correct answer with working (2)

(e) (i) 4.9 °C (1)

(ii) 56/44 (1) [11]