

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

General Certificate of Education Ordinary Level

MARK SCHEME for the June 2005 question paper

5070 CHEMISTRY

5070/04

Paper 4 (Alternative to Practical), maximum mark 60

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June 2005

GCE O Level

MARK SCHEME

MAXIMUM MARK: 60

SYLLABUS/COMPONENT: 5070/04

CHEMISTRY
Paper 4 (Alternative to Practical)



Page 1	Mark Scheme	Syllabus	Paper
	GCE O LEVEL – JUNE 2005	5070	4

- 1 (a) syringe [1]
 (b) 12 cm^3 [1]
- 2 (a) White [1]
 (b) Filtration [1]
 (c) (i) 0.012 (moles) [1]
 (ii) 0.015 (moles) [1]
 (d) (i) 0.012 (moles) [1]
 (ii) BaSO_4 [1]
 (iii) $233 (1) \times 0.012 = 2.796 (2.80) (1) \text{ g}$ [2]
 (ecf on incorrect answer for (d)(i) and incorrect formula (d)(ii))
- 3 (a) solid does not conduct a current (or similar) [1]
 (b) (i) bromine [1]
 (ii) brown gas [1]
 (gas or vapour must be mentioned in either (i) or (ii))
 (no other gas is acceptable)
 (iii) lead [1]
 (iv) on the floor of the cell [1]
 (c) (i) chlorine (1), bleaches litmus (1) [2]
 (ii) hydrogen (1), pops in a flame or with a lighted splint (1) [2]
 if products in (b)(i) and (iii) or gases in (c)(i) and (ii) are correct but reversed, 1 out of 2 in each or either case. Ecf test for O_2 only in (c), not any other gas.
 (d) molten sodium chloride [1]
- 4 to 8 (a), (c), (b), (d), (d) 1 mark each. [5]
- 9 (a) 1.98 (g) [1]
 (b) pipette [1]
 (c) yellow to orange, red or pink [1]
 (d)

25.9	48.7	33.4	1 mark for each correct row <u>or</u> column
0.0	23.3	7.8	
25.9	25.4	25.6	

 [3]
 mean value: $25.5 \text{ (cm}^3\text{)}$ [1]
 (e) 0.00204 (moles) [1]

Page 2	Mark Scheme	Syllabus	Paper
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- (f) 0.00102 (moles) [1]
- (g) 0.0102 (moles) [1]
- (h) 106 (g) [1]
- (i) 1.081 (g) [1]
- (j) 0.899 (0.90) (g) [1]
- (k) 4.90 (5) (accurate answer must be seen to gain this mark) [1]

- 10** 1. coloured solution (no compounds) [1]
 2. red-brown precipitate (1) insoluble in excess (1) [2]
 3. red-brown precipitate (1) insoluble in excess (1) [2]
 4. aq sodium hydroxide (1) aluminium foil and warm (1) [2]
 ammonia or gas evolved (1) which turns red litmus blue (1) [2]
 (or alternative test for ammonia)
 (if acid is used instead of NaOH in test, 1 mark lost
 if ammonia is used in test, 2 marks lost)
- $\text{Fe}(\text{NO}_3)_3$ [1]

- 11 (a)** 32, 55, 69, 80. All correct (2), one error (1) [2]
- (b) all points stated in (a) plotted correctly (1)
 straight line and curved line (1) [2]
- (c) Appropriate extrapolations at the lower ends (1)
 and upper ends (1) [2]
- (i) potassium chlorate(V) 0.35 g [1]
- (ii) potassium nitrate 3.30 g [1]
- (iii) 90 °C [1]
- (d) 52 g/100 g of water [1]
 (in parts (c) and (d) candidate's own graph should be read in marking the results)
- (e) solution and solid present [1]

Note: (i) if potassium chlorate (V) curve is extrapolated through zero, first extrapolation mark is lost but (c)(i) can score ecf from zero
 (ii) mark (a), (c)(i), (ii) and (d) to nearest half a small square

(Indicate marks awarded for graph at appropriate points)