UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS GCE Ordinary Level

MARK SCHEME for the October/November 2011 question paper for the guidance of teachers

5070 CHEMISTRY

5070/42

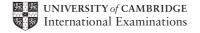
Paper 4 (Alternative to Practical), maximum raw mark 60

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1 ((a)	В ((1)

(b) pipette (1) [2]

- 2 (a) (i) insoluble (in water) not slightly soluble (1)
 - (ii) catalyst or speeds up reaction or dehydrating agent (1)
 - (iii) $CH_2 = CH_2(1)$
 - (b) (i) yellow, brown or orange (1)
 - (ii) colourless or decolourised (1)
 - (iii) addition or saturation (1) not bromination
 - (c) (i) butene ignore 1 or 2 in name (1) $CH_3CH_2CH=CH_2$ etc (1) [8]
- **3** (a) sea water is higher as it contains impurities, or dissolved salts (which increases the boiling point) (1)
 - **(b)** NaC*l* (1)
 - (c) (i) <u>flask</u> containing water (by label or observation) together with heat either shown as a bunsen or heating block or arrows labelled heat (1)

<u>condenser</u> showing outer and inner tube, sloping in correct direction, water labelled entering and leaving at correct points, (1) (no vertical condensers)

receiver <u>and</u> all the apparatus connected correctly (1) No blockages Ignore use of thermometer and fractionating tube

- (ii) desalination or reversed osmosis (1)
- (d) filtration or sedimentation or centrifugation (1)
- (e) chlorine (1) bleaches or decolourises litmus (1) [9]

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- 4 (a) syringe (1)
 - **(b)** lime water turns milky (1)
 - **(c) (i)** 0.005 (1)
 - (ii) 0.01 (1)
 - (iii) $0.01 \times 84 = 0.84g(1)$

[5]

(5) (d) (1)

[1]

(6) (d) (1)

[1]

(7) (c) (1)

[1]

(8) (b) (1)

[1]

(9) (c) (1)

[1]

- **10** (a) yellow to blue (1)
 - (b) 26.1 28.6 37.1 0.0 3.4 11.7 26.1 25.2 25.4

1 mark for each correct row or column (3)

- Mean titre = $25.3 (1) \text{ cm}^3$
- **(c)** 0.00506 / 0.0051 (1)
- **(d)** 0.00506 / 0.0051 (1)
- **(e)** 0.0506 / 0.051 (1)
- **(f) (i)** 0.0506 / 0.051 (1)
 - (ii) 2.02(4) / 2.04 (1)

[10]

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Page 4	Page 4 Mark Scheme: Teachers' version		Paper
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11	(a)	colourless solution, no colour, coloured solution not present (1)
		no compounds

- **(b) (i)** white ppt (1)
 - (ii) soluble (1)
- (c) (i) white ppt (1)
 - (ii) insoluble (1)
- (d) aq. NaOH (1) Al foil (1) warm (1) ammonia (1) or gas turns litmus blue or brown ring test: conc (1) H₂SO₄ (1) FeSO₄ (1) brown ring (1)

$$A_1(NO_3)_3$$
 (1)

- **12** (a) (i) 26, 35, 47, 60 all correct (2) one error (1)
 - (ii) all points plotted correctly (1) smooth curve through points (1)
 - (iii) 60 s (1)
 - (iv) 32°C (1)
 - **(b) (i)** all points plotted correctly (1) smooth curve through points (1)
 - (ii) 132s (1)
 - (iii) 30 °C on graph 1 ----- 60 seconds (1) 60 seconds on graph 2 ----- 0.052 mol/dm³ (1) (Correct answer, 0.052 mol/dm³ (2))

[For answers (a)(iii) and (iv), (b)(ii) and (iii) please read candidate's graphs to ± half small square.]