UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2008 question paper

0620 CHEMISTRY

0620/06 Paper 6 (Alternative to Practical), maximum raw mark 60

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International Examinations

1 **(a)** boxes correctly completed

measuring cylinder (1)

spatula (1)

tripod (1) [3]

(b) more than enough to react owtte (1) [1]

(c) diagram showing filter paper in a funnel (1) either labelled (1) [2]

[Total: 6]

2 **(a)** **(i)** electrodes labelled correctly (1) [1]

(ii) carbon/graphite or platinum (1) [1]

(b) bulb lights/brownish/red/orange gas/liquid/bubbles/silver beads formed/melts in tube [max 2]

(c) any correct protective clothing e.g. gloves/lab coat (1)

fume cupboard/well ventilated room (1) [2]

[Total: 6]

3 **(a)** boxes completed correctly to show position of hydrochloric acid (1)
and sodium sulphite (1) [2]

(b) arrow underneath flask (1) [1]

(c) mistakes passed through water (1)
collected by upward delivery (1) [2]

[Total: 5]

4 Table of results

Experiment 1
initial and final volume boxes correctly completed (1), 0.0 and 26.0

Experiment 2
initial and final volume boxes correctly completed (2), 16.0 and 29.0

differences completed correctly (1), 26.0 and 13.0 [4]

(e) **(i)** Experiment 1 (1) [1]

(ii) more in Experiment 1/greater volume (1) ×2 (1) [2]

(iii) solution **A** more concentrated/stronger than **B** (1) X2 (1) [2]

(f) twice the volume value for Experiment 2/26 (1) cm^3 (1) [2]

(g) change e.g. repeat titrations (1) or use a burette/pipette

explanation e.g. average reading more accurate (1) instead of m/cylinder [2]

(h) **(i)** iron(II) ions present (1) [1]

(ii) iron(III) ions (1) [1]

[Total: 15]

5 Tests on solid **T**

(b) **(ii)** white (1) precipitate (1) insoluble in excess (1) [2]

(iii) no/slight (1) precipitate (1) max 4 for **(ii)** and **(iii)** [2]
no reaction (1) only

(e) weak (1) acids (1) [2]

(f) copper present(1) ethanoic acid/organic salt (1) [2]

[Total: 8]

6 **(a)** Table of results

volumes correctly completed (4), -1 for each incorrect

0, 18, 34, 42, 59, 63, 63 [4]

(a) points plotted correctly (3), -1 for each incorrect
smooth line curve (1) [4]

(c) reaction finished/all acid used up (1) [1]

(d) point at 3 minutes/at 42 cm^3 (1) does not fit curve owtte (1) [2]

(e) sketch line below plotted curve (1) levels off around 30 cm^3 (1) [2]

[Total: 13]

7 **(a)** test red litmus (1) or other named indicator

result blue (1) [2]

(b) fractional (1) distillation (1) fractionation (1) [2]

(c) blue cobalt chloride paper (1) turns pink (1)

OR anhydrous/white copper sulphate (1) turns blue (1) [2]

(d) catches fire owtte (1) [1]

[Total: 7]

[Total for paper: 60]