

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

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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- 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]

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- (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) cm³ (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 cm³ (1) does not fit curve owtte (1) [2]
- (e) sketch line below plotted curve (1) levels off around 30 cm³ (1) [2]

[Total: 13]

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- 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]**