

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 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) mortar (1)
 stirrer/(glass) rod (1) not metal rod or thermometer
 funnel (1) not filter or filter paper [3]
- (b) (i) water [1]
 (ii) origin correctly labelled on diagram i.e. at dot [1]
- (c) two spots/dots at different levels in vertical line [1]
 allow three spots if one is origin
- [Total: 6]**
- 2 (a) carbon/graphite/any unreactive metal e.g. platinum/nickel [1]
- (b) lighted splint (1) pops (1) [2]
- (c) gas dissolves (in the solution) o.w.t.t.e [1]
- (d) alkali/(sodium) hydroxide (1)
 chlorine/bleach (1) not chloride or chlorine ions [2]
- [Total: 6]**
- 3 (a) heat indicated in wrong position (1)
 no water in the trough (and collection tube) (1) [2]
- (b) bromine/iodine (water) (1) turns colourless (1) not clear [2]
- [Total: 4]**
- 4 (a) Table of results
- | | | | | | |
|---------------------------------------|-----|-------------------|--|--|-----|
| Initial boxes correctly completed (1) | 24 | | | | |
| | 26 | | | | |
| | 21 | | | | |
| | 29 | | | | |
| Final boxes correctly completed (1) | 27 | | | | |
| | 22 | | | | |
| | 11 | | | | |
| | 23 | | | | |
| Differences correctly completed (1) | +3 | signs correct (1) | | | |
| | -4 | | | | |
| | -10 | | | | |
| | -6 | | | | [4] |

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- (b) all 4 bars correctly drawn (3), –1 for each incorrect labelled (1) [4]
- (c) (i) solid **A**/Experiment 1 [1]
(ii) temperature increased/heat given out [1]
- (d) Experiment 3 [1]
- (e) (i) double the value or (–)8°C e.c.f. [1]
(ii) half the value or (–)3°C e.c.f. [1]
(iii) more/larger volume of water (1) twice as much (1) for solid to dissolve in [2]
- (f) acid present (1) carbonate present (1) carbon dioxide (1) [max 2]

[Total: 17]

- 5 (a) solution K blue/green not precipitate [1]
- (c) tests on solution K
- (i) blue (1) precipitate (1) [2]
(ii) blue precipitate [1]
deep/royal (1) blue solution or precipitate dissolves (1) [2]
(iii) no reaction/change/nothing [1]
(iv) white precipitate [1]
- (d) tests on solution L
- (iii) no reaction/change/nothing [1]
(iv) white precipitate [1]
- (e) acids [1]
- (f) iron (1) (III) (1) or Fe³⁺ (2) ignore anions [2]

[Total: 13]

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- 6 (a) Points plotted correctly (3), –1 for each incorrect smooth curve (1) not a straight line [4]
- (b) 47 ± 1 or reading from graph (1) curve extrapolated on grid (1) [2]
- (c) solid/crystals form owtte (1) 20g (1) not solubility decreases [2]

[Total: 8]

- 7 (a) heat/warm the acid (1) add excess oxide or description of no more solid reacting (1) filter/decant (1) [3]
- (b) heat qualified e.g. to crystallising point or description of e.g. using glass rod/leave it to evaporate (1) cool to form crystals (1) filter off crystals (1) method of drying crystals e.g. pressed filter papers/oven at low temperature (1) [max 3]

[Total: 6]

[Total for paper: 60]