

MARK SCHEME for the October/November 2008 question paper

0620 CHEMISTRY

0620/06

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

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- 1 (a) mortar (1)
 stirrer/(glass) rod (1) not metal rod or thermometer
 funnel (1) not filter or filter paper
- (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)
- (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
- (b) 47 ± 1 or reading from graph (1) curve extrapolated on grid (1) [2]
- (c) solid/crystals form (1) 20g (1) [2]
not solubility decreases

[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]