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

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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]

(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)** <u>solution **K**</u> blue/green not precipitate [1]

(c) <u>tests on solution **K**</u>

(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) <u>tests on solution **L**</u>

(iii) no reaction/change/nothing [1]

(iv) white precipitate [1]

(e) acids [1]

(f) iron (1) (III) (1) or Fe^{3+} (2) ignore anions [2]

[Total: 13]

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) [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]