UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2010 question paper for the guidance of teachers

0620 CHEMISTRY

0620/62 Paper 6 (Alternative to Practical), maximum raw mark 60

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1 **(a)** flask (1) pipette (1) burette (1) [3]

(b) named indicator (1) colour change (1) [2]
not incorrect colour change

[Total: 5]

2 correct test (1) result (1)
examples given are not the only possible correct responses
note incorrect test means zero for result e.g. test for KC*l*, add sulfuric acid gives white ppt scores no marks. **Except** for NaOH, unnamed indicator turns blue or purple scores one mark for the result.

aqueous potassium chloride	(nitric acid) silver nitrate / lead nitrate (1) white precipitate (1)
ethanol	lighted splint (1) flame produced (1) **allow** dichromate / manganate and correct colour change **not** b.p.
sodium hydroxide solution	named indicator (1) correct colour change or pH (1) **allow** named metal salt solution and correct ppt. colour

[Total: 6]

3 **(a)** all points plotted correctly (2), –1 each incorrect
straight line (1) [3]

(b) gas / carbon dioxide given off [1]
not hydrogen gas given off

(c) prevent loss of acid / liquid [1]

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

(ii) (in Experiment 2) the temperature of the acid was lower / converse [1]

(e) 18.5 minutes ±1/2 small square (1) extrapolation on grid (1) [2]

(f) sketched line to the left of Experiment 1 line [1]

[Total: 10]

4 **(a)** initial temperature boxes correctly completed 23 (1)
final temperature boxes completed (2) –1 each incorrect
21 20 19 17 [3]

(b) initial temperature boxes correctly completed 22 (1)
final temperature boxes correctly completed (1), –1 each incorrect
26 28 30 [2]

(c) points plotted correctly (3), –1 for each incorrect
best fit straight line graphs (2)
labels (1) [6]

(d) **(i)** value from graph 34 ^{o}C (1)
shown clearly on graph (1) [2]

(ii) value from graph 18 ^{o}C (1) shown clearly (1) [2]

(e) endothermic [1]

(f) temperature changes would be smaller / half owtte (1)
more water (1) [2]

(g) solid would dissolve slower / react slower or take longer to reach final temperature (1)
smaller surface area (1) [2]
allow converse e.g. dissolves faster or reaches final temperature faster
larger surface area

[Total: 20]

5 **(a)** yellow (1) precipitate (1) [2]

(b) effervescence / fizz / bubbles (1)
pungent smell (1)
pH paper blue / purple / >7 (1) [3]
ignore white ppt.

(d) carbon dioxide [1]

(e) zinc (1) carbonate (1) [2]

[Total: 8]

6 **(a)** electroplating [1]

(b) **(i)** chromium (1)

(ii) any named chromium salt (1) [2]

(c) to stop corrosion owtte (1)
to look attractive owtte (1) [2]

[Total: 5]

7 specified number / mass of nails (1)
add x cm^3 sample of water (1)
in a test-tube / beaker (1)
leave until nails rust and note time (1)
not unrealistic time, must be at least one day
repeat with other water samples (1)
same volume water / number of nails (1)
compare / describe results (1) [max 6]

[Total: 6]