UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2011 question paper for the guidance of teachers

0620 CHEMISTRY

0620/61 Paper 6 (Alternative to Practical), maximum raw mark 60

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1 **(a)** **(i)** (gas) syringe (1) [1]

(ii) arrow indication under copper (1) [1]

(b) spatula (1) [1]

(c) black (1) [1]

(d) to return to room/initial temperature (1)
correct volume of gas (1) [2]

2 **(a)** points plotted correctly (2)
smooth line graph missing anomalous point (1) [3]

(b) point at 15 cm^3/pH 2.6/third point (1) [1]

(c) **(i)** 12.6 (1) [1]

(ii) pH 1 (1) extrapolation shown (1) [2]

(d) **(i)** 7 (1) [1]

(ii) 25 (1) [1]

(e) repeat experiment (1) stop when 25 cm^3 added/when pH7 (1)
evaporate/heat (1) use same volumes (1)
to crystallising point/until saturated (1) max [3]

3 **(a)** chromatography (1) [1]

(b) line drawn on diagram below origin (1) [1]

(c) does not interfere with results/owtte (1) [1]

(d) difference
A has more/3 colours/**B** has less/2 colours/**B** contains **F** but **A** doesn't/**A** contains **C**/**D** but **B** does not (1)

similarity
both contain same colour/**E** (1) [2]

(e) **C**, **D** and **E** (1) [1]

4 **(a)** Table of results for Experiment 1
temperature boxes completed correctly (3)
20, 21, 21, 32, 39, 42, 44, 45, 45 [3]

(b) Table of results for Experiment 2
temperature boxes completed correctly (3)
20, 21, 21, 24, 32, 36, 37, 38, 38 [3]

(c) all points correctly plotted (3) -1 for each incorrect
best fit smooth line graphs (1)
labels (1) [5]

(d) value from graph ≈28°C ± half small square (1) unit (1) shown clearly (1) [3]

(e) exothermic/redox/displacement (1) [1]

(f) **(i)** temperature rises greater/faster in Experiment 1 (1) **allow** converse [1]

(ii) zinc is more reactive (1) [1]

(g) temperature changes would be same/faster/owtte (1) metal in excess (1)/
temperature changes would be greater (1) lower volume (1) [2]

(h) solid would react slower/temperature rises would be slower (1)
smaller surface area (1) [2]

5 **(a)** **(i)** **P** colourless, no smell (1) [1]

(ii) **P** pH 1–3 (1) [1]

(b) **P** fizzes/effervescence/bubbles (1)
lighted splint pops (1) **not** hydrogen [2]

(c) white (1) precipitate (1) [2]

(e) weak acid (1) ethanoic acid (2) [2]

(f) water (1) [1]

6 measured volume of seawater (1)
using measuring cylinder (1)
into evaporating dish/beaker (1)
pre-weighed (1)
evaporate/heat (1)
to dryness/constant mass (1)
re-weigh (1)
indication of calculation method (1) max [6]

would not work = max 0

[Total: 60]