CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 series

0620 CHEMISTRY

0620/53 Paper 5 (Practical), maximum raw mark 40

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1 (b) Table of results

Experiment 1
initial and final volumes completed correctly (1)
difference calculated correctly (1)

Experiment 2
initial and final volumes and difference completed correctly (1)
difference calculated correctly (1)

both experiments
all results to 1 (or 2) dp, including 0.0 (1)
difference in experiment 2, difference in experiment 1 (1) [6]

(c) yellow (1) to orange / pink / red (1) [2]

(d) neutralisation (1) **accept:** endothermic [1]

(e) experiment 2 (1) **allow:** ecf on results [1]

(f) (i) (about) 3x as much used in experiment 1 (1) **allow:** ecf on results [1]

(ii) solution / acid **G** / 2 (1) [1]

(g) twice value from table result for experiment 2 (1) cm^3 (1) [2]

(h) use a pipette / burette [1]

(i) effect none owtte (1)

reason no change in concentration / same amounts (1) owtte [2]

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(j) any correct method that would work – precise details not needed

using same method (volume required) with different bases = 0
adding indicator and checking colour = 0

reagents (1) method (1) result (1) [3]

e.g. (to hydrochloric acid) add named metal e.g. Mg, Zn (1)

measure temperature change (1)

largest change = more concentrated solution (1)

(to hydrochloric acid) add sodium hydroxide solution (1)

measure temperature change (1)

largest change = more concentrated solution (1)

to hydrochloric acid add named metal / metal carbonate

measure speed of reaction (time to complete/rate of gas production)

fastest = more concentrated solution

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2 **(a)** blue / green (1) [1]

(pale) blue / green / greener (1) [1]

(b) blue (1) precipitate (1) [2]

with heat: turns brown (1) then black (1)
sharp / vinegar / pungent / strong / sour / bitter smell (1) max 2 [2]

with nitric acid turns green / blue (1) [1]

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

with excess: deep blue (1) solution / clear / dissolves (1) [2]

(d) **(i)** solid turns black (1) condensation at top of tube (1)

splint flashes / flame at top of tube (1) max 2 [2]

(ii) effervescence / bubbles / fizz (1)

splint extinguished owtte (1) [2]

(e) vinegar / pungent / sharp / strong / sour / bitter smell (1) [1]

(f) copper (1) ethanoate / organic (1) [2]

(g) carbonate (forms on heating) (1)
carbon dioxide (forms) (1)
organic / flammable gas given off when heated (1)
ethanoate (1) max 2 [2]

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