CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2012 series

0620 CHEMISTRY

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

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1 **(a)** flask (1)
measuring/graduated cylinder (1) [2]

(b) **(i)** does not react/unreactive/not reactive enough/below hydrogen in the reactivity series (1) [1]

(ii) magnesium/zinc/iron/aluminium (1) [1]

(c) diagram of (gas) syringe (1)
syringe labelled (1) [2]

(d) lighted splint/flame test (1)
pops (1) [2]

2 **(a)** straight line drawn with a ruler missing point at concentration 0.15 (1)
through origin (1) [2]

(b) 0.56/0.57/0.58 (1)
extrapolation shown (1) [2]

(c) line to right hand side of original and goes through origin (1) [1]

(d) **(i)** catalyst/to speed up the reaction (1) [1]

(ii) slower/owtte (1)
less surface area (1) [2]

3 **(a)** spatula (1) **not:** spoon [1]

(b) nitric/HNO_3 (1) [1]

(c) **(i)** toxic/poisonous/harmful gas given off or named toxic gas (1) [1]

(ii) idea of ensuring constant mass (1)
reaction complete (1) [2]

(d) **(i)** spillage (1)
inaccurate weighing (1)
loss by spitting (1)
reaction not complete/owtte (1)
some solid left in beaker (1) [2]

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4 **(a)** Table of results for Experiment 1
temperature boxes completed correctly (3), –1 any incorrect

23 27 31 34 36 35 34 33 32 [3]

(b) Table of results for Experiment 2
temperature boxes completed correctly (3), –1 for each incorrect

23 28 32 35 37 38 39 38 36 [3]

(c) all points correctly plotted ±1/2 small space(3) –1 for any incorrect
best fit smooth line graphs (2)
labels (1) [6]

(d) value from graph ,29–30 °C (1)
shown clearly (1) [2]

(e) exothermic (1) [1]

(f) **(i)** experiment 2/acid H (1) [1]

(ii) acid (H) is more concentrated/stronger (1) [1]

(g) room/initial temperature from table/23 °C (1)
reaction finished/owtte (1) [2]

5 **(a)** green (1) [1]

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

(c) green precipitate (1) [1]

(d) no reaction/no precipitate/no change/no observation/nothing (1) [1]

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

(i) ammonia (1) [1]

(j) transition metal/cobalt (1) ignore copper
nitrate (1) [2

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6 **(a)** test (1) e.g. add named indicator/marble chip/magnesium
result (1) e.g. ethanoic acid changes colour of indicator/ethanoic acid effervesces [2]
allow: lighted splint (1) ethanol burns (1)

(b) any 6 from:
weigh coal/equal masses/equal amounts (1)
crush (1)
heat (1)
in a fume cupboard (1)
pass through potassium manganate (1)
time to colourless (1)
repeat with other coal (1)
compare/conclusion (1) [6]

[Total: 60]

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