CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2014 series

0620 CHEMISTRY

0620/63 Paper 6 (Alternative to Practical), maximum raw mark 60

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1 **(a)** **(i)** water (1) [1]
not: steam

(ii) two arrows, one under magnesium, one on wool (1) [1]

(b) **(i)** grey / silver (1)

white (ash) (1)

glows / ignites / burns (1) max 2 [2]

(ii) dissolves / forms solution / alkali (1)

blue / purple / pH>7 (1) [2]

(c) catches fire / explodes / pops (1)

hydrogen (1) [2]

2 **(a)** labels on both graphs, i.e. Experiment 2 on that levelling at 60 and Experiment 1 on graph levelling at 30 (1) [1]

(b) **(i)** water (1)

25 cm^3 of dilute acid + 25 cm^3 of water / equal volumes (1) [2]

(ii) graph less steep than others (1)

levelling at 15 (1) [2]

(c) gas syringe **or** measuring cylinder <u>inverted in trough of water</u> (1)

labelled collection vessel / graduations shown on collection vessel (1) [2]

(d) heat / increase temperature (1)

particles have more energy / move faster (1)

more frequent / more successful / more collisions(1)

OR

catalyst (1)

lowers activation energy (1)

more successful collisions (1) [3]

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3 **(a)** electroplating (1) [1]
allow: electrolysis

(b) to clean / remove dirt / impurities (1)

so nickel coats evenly / efficiently (1) [2]

(c) aqueous / solution in water(1)

named nickel salt (1) [2]
allow: nickel ions

(d) bulb lights / (silver) deposit on key (1) [1]

(e) rinse with water and suitable method to dry e.g. oven / hairdryer (1) [1]

4 **(a)** temperature boxes correctly completed (2),
25, 36, 38, 37, 36, 35, 34 [2]
guidance: 7 correct (2); 6 correct (1); 5 or fewer correct (0)

(b) temperature boxes completed correctly
25, 19, 18, 17, 16, 16, 17 [2]
guidance: 7 correct (2); 6 correct (1); 5 or fewer correct (0)

(d) all points correctly plotted(3)
guidance: 7 correct (2); 6 correct (1); 5 or fewer correct (0)

smooth line graphs (2)

labels (1) [6]

(e) **(i)** value from graph (1) 37.5 s

shown clearly (1) [2]

(ii) value from graph (1) 6 s

shown clearly (1) [2]

(f) endothermic (1) [1]

(g) M is a carbonate / carbon dioxide given off (1) [1]

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(h) lower temperature changes (1)

greater volume / more water (1) [2]

(i) room temperature or 25 °C (1)

reaction finished (1) [2]

(j) more readings / points / more accurate / better graph (1) [1]

5 **(c)** **(i)** white (1)

precipitate(1)

insoluble(1) [3]

(ii) no / thin precipitate (1) [1]

(iii) yellow precipitate (1) [1]

(d) copper (1)

oxide (1) [2]

6 x cm^3 of vinegar (1)

in named container e.g. beaker (1)

add named indicator (1)

add sodium hydroxide until colour change (1)

record volume sodium hydroxide added (1)

repeat with other vinegar (1)

compare results (1) [7]

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