UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2010 question paper

for the guidance of teachers

0620 CHEMISTRY

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

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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1 **(a)** Bunsen (burner) (1) tripod (1) condenser (1)

(b) **(i)** F (1) allow description

(ii) G (1) allow description [2]

2 **(a)** pestle and/or mortar (1) accept diagram not bowl/crusher [1]

(b) pour off/out liquid owtte (1) not separate/filter [1]

(c) chromatography/chromatogram (1)
apply solution to paper (1)
use of (named) solvent (1) not water
conclusion/results/spots at different levels (1)
all marks can be scored from a labelled diagram
dipping paper in green solution = max 2 [4]

3 **(a)** volumes completed correctly
0, 20, 26, 41, 45, 46 –1 for each incorrect [3]

(b) points plotted correctly including origin (3) –1 for each incorrect
smooth curve (1) [4]

(c) point at 2 minutes (1)
off curve owtte (1) [2]

(d) steeper curve (1) levels out at same volume (1) [2]

4 **(a)** Table of results for Experiment 1
temperature boxes completed correctly (2), –1 for each incorrect
23 25 27 26 25 24 23

(b) Table of results for Experiment 2
temperature boxes completed correctly (2), –1 for each incorrect [2]
23 33 35 33 31 29 27

(c) all points correctly plotted (3), –1 for any incorrect
smooth line graphs (2) or two intersecting straight lines
labels (1) [6]

(d) value from graph ±1 small square (1) shown clearly (1) [2]

(e) **(i)** experiment 2 (1) [1]

(ii) acid D more concentrated (1)
stronger (1)
more collisions (1) max [2]

(f) to clean it/remove acid C owtte (1) [1]
room temperature or initial temperature from table (1)
reaction finished owtte (1) [2]

5 Tests on solid **E**

(c) **(i)** white (1) precipitate (1)
no change with excess/insoluble (1) [3]

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

(d) contains water/hydrated (1) [1]

(e) not a sulfate (1) accept not a carbonate [1]

(f) ammonia (1) not ammonium [1]

(g) nitrate (1)
hydrated salt (1)
not a sulfate (1)
not a carbonate (1) max [2] [2]

6 **(a)** electrolysis (1)

(b) platinum/graphite/carbon (1) [1]

(c) (blue) litmus/universal indicator paper/pH paper (1)
bleaches/turns white (1) [2]

(d) hydrogen (1) [1]

7 add (named) acid/water/salty water to piece of copper/steel (1)
heat (1)
for specified/same time (1)
observe reaction/effect (1)
repeat with other metal (1)
compare metals (1) [6]
no reagents = 0 marks

or heat metal (1)
repeat with other metal (1)
method for measuring conductivity (1) max [3] [3]

[Total: 60]