CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 series

0620 CHEMISTRY

0620/52 Paper 5 (Practical), maximum raw mark 40

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.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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International Examinations

1 (a) Table of results for Experiment 1

initial and final volumes and differences completed correctly (1)

within ± 2 Supervisor (1)

all results (both tables) to 1 or 2 decimal places (including 0.0) (1) [3]

(b) Table of results for Experiment 2

initial and final volumes and differences completed correctly (1)

titre lower than experiment (1)

within ± 2 Supervisor (1) [3]

(c) (i) to speed up the reaction / owtte (1) [1]

(ii) colourless (1) **not:** clear, to brown / pink / purple / lilac / mauve (1) [2]

(iii) not an acid / alkali reaction or potassium manganate is coloured / self indicating owtte (1) [1]

(d) (i) experiment 1 **allow:** ecf from results (1) [1]

(ii) experiment 1 (about) 2x volume experiment 2 – quantitative relationship required. **allow:** ecf from results [1]

(iii) solution **B** / experiment 1 more concentrated / stronger or converse (1)

(about) 2x as concentrated – quantitative statement (1) [2]

(e) half value from table result for experiment 2 (1) cm^3 (1)

half volume / amount (of **C**) used (1) [3]

(f) (both) oxidation (1)
(and) reduction (occur) (1)

accept: answers using definitions of oxidation in terms of:
oxygen / hydrogen / electrons / oxidation numbers

transfer of electrons scores 2 [2]

(g) advantage: easy to use / quick / convenient (1)

disadvantage: not accurate owtte (1) [2]

2 bubbles / fizz (ignore references to colour / ppt) (1) [1]

(a) pH = 7 (accept any in range 5 to 7, must be a number) (1) [1]

(b) **(i)** white precipitate (1)
dissolves / clears (1) [2]

(ii) white precipitate (1)
Insoluble / does not dissolve (1) (dependent on a ppt having been formed) [2]

(c) no change / colourless solution / no ppt / no reaction (1) [1]

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

(e) bubbles / fizz / effervescence (1)

limewater (1) milky (1) [3]

white (1) precipitate (1) [2]

(f) aluminium (1) sulfate (1) [2]

(g) carbon dioxide (1) [1]

(h) calcium (1) carbonate (1) [2]