CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2013 series

0620 CHEMISTRY

0620/53 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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CAMBRIDGE
International Examinations

1 **(a)** table of results for Experiment 1
initial and final volumes and differences completed correctly (1)
to 1 decimal place (1)
comparable to supervisors (1) $\pm 2\,cm^3$ [3]

(b) table of results for Experiment 2
initial and final volumes and differences completed correctly (1)
to 1 decimal place (1)
comparable to supervisors (1) $\pm 2\,cm^3$ [3]

(c) Experiment 3
green (1)
precipitate (1)
brown at surface (1) max [2]

(d) **(i)** colourless / pale green **not** clear to yellow / pink (1)
pink / purple to colourless [1]

(ii) not an acid / alkali reaction or potassium manganate is coloured / owtte
not needed / would interfere (1) [1]

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

(ii) experiment 2 2x volume experiment 1 [1]

(iii) solution E more concentrated / stronger (1) or converse
2x as concentrated (2) [2]

(f) half value from table result for experiment 2 (1)
half volume of C used (1) [2]

(g) advantage easy to use / quick / convenient (1)
disadvantage not accurate / owtte (1) [2]

(h) iron (1)(II) (1) oxidised to iron(III) / reacted with air (1) [3]

2 **(a)** yellow (1)
pH = 6–8 (1)
with acid turns orange (1)
with excess alkali yellow (1) [4]

(b) blue (1)
effervescence (1) / (max 1)
glowing splint (1)
relights/brighter (1) [3]

(c) red / brown (1)
precipitate (1)
with acid yellow solution / dissolves (1) [3]

(d) yellow (1)
precipitate (1)
with acid yellow solution / dissolves (1) [3]

(e) turns green (1)
bubbles / fizz / effervescence (1) [2]

(f) reversible (1)
solution returned to original colour (1) [2]

(g) oxygen (1) [1]

(h) transition metal (ion present) / neutral dependent on pH in **(a)** (1) [1]