CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2013 series

0620 CHEMISTRY

0620/61 Paper 6 (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.

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

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

CAMBRIDGE
International Examinations

1 **(a)** funnel (1) [1]

(b) to move products through the apparatus / owtte e.g. let the gases go out (1) [1]

(c) **(i)** limewater (1)
to detect carbon dioxide (1) [2]

(ii) so gas bubbles through liquid (1) [1]

(d) condensation / drops (1) water (1) [2]
allow: black deposit (1) soot / carbon (1)

2 **(a)** straight line drawn with a ruler through all points missing point at pH 5 (1) [1]

(b) idea of fair test / comparability (1) [1]

(c) temperature (1) [1]

(d) the lower the pH the greater the % corrosion / or converse / pH 1 is most corrosive (1) [1]

(e) 2.5% (1) [1]

3 **(a)** table of results for Experiment 1
initial, final and difference volume boxes completed correctly (1)
0.0, 38.0 difference 38.0
readings to 1dp (1) [2]

(b) table of results for Experiment 2
initial and final boxes completed correctly (1) 10.0, 29.0
difference (1) [2]

(c) colourless (1) pink (1) [2]

(d) neutralisation / exothermic (1) [1]

© Cambridge International Examinations 2013

(e) 2 × volume for Experiment 1 from table / 76 (1) cm^3 (1) [2]

(f) **(i)** reacts with the acid / neutralised (1) less sodium hydroxide needed (1) [2]

(ii) volume in **(e)** – volume added in Experiment 2 (1) e.g. 76–19
correct value (2) e.g. 57 cm^3 [2]

(iii) estimate based on **(ii)** answer to **(ii)** / 3 divided into 19 × 0.1 + 0.3 = 0.4 g [1]

(g) no effect (1)
reason – reaction not affected by temperature (1) [2]

(h) **(i)** more accurate (1) than a measuring cylinder (1) [2]

(ii) no effect / advantage (1) not measuring temperature changes (1) [2]

4 tests on liquid L

(a) colourless (liquid) [1]
allow: (pale) yellow

(c) no reaction / change (1) [1]

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

(e) iodine dissolves / owtte (1) [1]

(f) organic (1) solvent (1) liquids do not mix (1) max [2]

© Cambridge International Examinations 2013

5 **(a)** volumes completed correctly (4), –1 each incorrect [4]

time / s	catalyst R	catalyst S
0	0	0
30	23	16
60	34	36
90	59	51
120	66	63
150	71	69
180	72	72

(b) points plotted correctly (3) smooth curves (2) labels (1) [6]

(c) result at 60s / volume 34 / third result (1) [1]

(d) R (1) rate faster (1) [2]

(e) sketch to left of R graph / steeper (1) to same level (1) [2]

6 mass of silica gel (1)
heat in oven > 100 ˚C (1)
for specified realistic time / until turns blue (1)
reweigh (1) record (1)
heat in oven again to check constant mass / indication of colour change (1)
calculation (1) max [6]

© Cambridge International Examinations 2013