

**UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**International General Certificate of Secondary Education**

**MARK SCHEME for the October/November 2011 question paper  
for the guidance of teachers**

**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 must be read in conjunction with the question papers and the report on the examination.

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2011	0620	61

- 1 (a) (i) (gas) syringe (1) [1]  
(ii) arrow indication under copper (1) [1]
- (b) spatula (1) [1]
- (c) black (1) [1]
- (d) to return to room/initial temperature (1)  
correct volume of gas (1) [2]
- 2 (a) points plotted correctly (2)  
smooth line graph missing anomalous point (1) [3]
- (b) point at 15 cm<sup>3</sup>/pH 2.6/third point (1) [1]
- (c) (i) 12.6 (1) [1]  
(ii) pH 1 (1) extrapolation shown (1) [2]
- (d) (i) 7 (1) [1]  
(ii) 25 (1) [1]
- (e) repeat experiment (1) stop when 25 cm<sup>3</sup> added/when pH7 (1)  
evaporate/heat (1) use same volumes (1)  
to crystallising point/until saturated (1) max [3]
- 3 (a) chromatography (1) [1]
- (b) line drawn on diagram below origin (1) [1]
- (c) does not interfere with results/owtte (1) [1]
- (d) difference  
**A** has more/3 colours/**B** has less/2 colours/**B** contains **F** but **A** doesn't/**A** contains **C**/  
**D** but **B** does not (1)
- similarity  
both contain same colour/**E** (1) [2]

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2011	0620	61

- (e) C, D and E (1) [1]
- 4 (a) Table of results for Experiment 1  
temperature boxes completed correctly (3)  
20, 21, 21, 32, 39, 42, 44, 45, 45 [3]
- (b) Table of results for Experiment 2  
temperature boxes completed correctly (3)  
20, 21, 21, 24, 32, 36, 37, 38, 38 [3]
- (c) all points correctly plotted (3) -1 for each incorrect  
best fit smooth line graphs (1)  
labels (1) [5]
- (d) value from graph  $\approx 28^{\circ}\text{C} \pm$  half small square (1) unit (1) shown clearly (1) [3]
- (e) exothermic/redox/displacement (1) [1]
- (f) (i) temperature rises greater/faster in Experiment 1 (1) **allow** converse [1]  
(ii) zinc is more reactive (1) [1]
- (g) temperature changes would be same/faster/slower (1) metal in excess (1)/  
temperature changes would be greater (1) lower volume (1) [2]
- (h) solid would react slower/temperature rises would be slower (1)  
smaller surface area (1) [2]
- 5 (a) (i) P colourless, no smell (1) [1]  
(ii) P pH 1–3 (1) [1]
- (b) P fizzes/effervescence/bubbles (1)  
lighted splint pops (1) **not** hydrogen [2]
- (c) white (1) precipitate (1) [2]
- (e) weak acid (1) ethanoic acid (2) [2]
- (f) water (1) [1]

<b>Page 4</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>IGCSE – October/November 2011</b>	<b>0620</b>	<b>61</b>

- 6 measured volume of seawater (1)  
 using measuring cylinder (1)  
 into evaporating dish/beaker (1)  
 pre-weighed (1)  
 evaporate/heat (1)  
 to dryness/constant mass (1)  
 re-weigh (1)  
 indication of calculation method (1) max [6]
- would not work = max 0

**[Total: 60]**