

**UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
International General Certificate of Secondary Education

**MARK SCHEME for the May/June 2011 question paper**  
**for the guidance of teachers**

**0620 CHEMISTRY**

**0620/63**

Paper 6 (Alternative to Practical), maximum raw mark 60

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.

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- 1 (a) measuring cylinder (1) [1]
- (b) (i) condenser (1) **accept** condensing tube  
 evaporating dish/basin/bowl (1) **accept** crystallising dish/basin/bowl  
 tripod (1) [3]
- (ii) A/distillation (1) [1]
- (c) **ignore** reference to filtering  
 heat/evaporate/use apparatus B (1) **not** 'heat' if the method would not work  
 to crystallising point/until saturated (1) [2]
- 2 (a) Table of results
- highest temperatures correct (3), –1 for each incorrect up to 3  
 26, 28, 34, 38, 42 **ignore** decimal place unless incorrect
- temperature rises (1)  
 4, 6, 12, 16, 20 **ignore** decimal place unless incorrect [4]
- (b) points plotted correctly (2), –1 for each incorrect up to 2 **ignore** origin  
 straight line drawn with a ruler and missing anomalous point (1)  
 need not go through origin, do not accept double lines [3]
- (c) second point/Experiment 2/0.6 g zinc/6 °C (1) [1]
- (d) 24 (1) **accept** 23.5–24.5 °C (1) extrapolation shown on grid (1) [3]
- (e) blue colour turns colourless/paler/owtte (1) **not** just colour changes  
 pink/red/brown/black solid (1) **not** Zn dissolves/Cu forms  
 fizzing/bubbles (1) **not** gas given off max [2]
- 3 (a) lamp lights (1)  
 fizzing/bubbles/green gas (1) **ignore** gas/H<sub>2</sub> produced **allow** bleach like smell [2]
- (b) carbon/graphite/platinum (1) [1]
- (c) hydrogen/H<sub>2</sub> (1) **not** H [1]
- (d) fume cupboard/ventilated area (1)  
 protective clothing e.g. gloves/goggles/lab coat/tie back hair (1) [2]

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#### 4 Experiment 1

(a) Table of results  
volume boxes completed correctly (3), –1 for each incorrect up to 3  
0, 13, 22, 30, 36, 43, 49 **ignore** decimal place unless incorrect [3]

(b) Experiment 2  
volume boxes completed correctly (3), –1 for each incorrect up to 3  
0, 5, 10, 13, 17, 20, 23 **ignore** decimal place unless incorrect [3]

(c) all points correctly plotted (3), –1 for any incorrect up to 3  
two smooth line graphs and must go through origin (2)  
lines clearly labelled (1) [6]

(d) (i) Experiment 1/acid X (1) [1]

(ii) acid X stronger/more concentrated or converse (1) **allow** 2×  
**ignore** reference to catalyst/reactivity [1]

(e) reaction finished (1) all acid used up (1) **not** Mg used up, **ignore** reactants used up [2]

(f) value from graph (1) 69–72 s **allow** ecf from incorrect graph  
tie line/indication shown (1) [2]

(g) advantage e.g. convenient/easy/quick to use/fairly accurate (1)  
disadvantage e.g. reference to inaccurate measurement (1)  
do not allow 2 marks for references to accuracy [2]

5 (b) (i) white (1) precipitate (1) [2]

(ii) paper turns blue (1) pH>7 (1) smelly/pungent gas (1) max [2]

(iii) no precipitate/reaction/change (1) [1]

(e) carbon dioxide/CO<sub>2</sub> produced (1) [1]

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

6 known/fixed/same volume/same mass of water (1)  
temperature taken at beginning and end **or** temperature change (1)  
known mass/volume/change in mass of fuel (1) **accept** any measurement of mass of fuel  
ignite/burn the fuel **or** heat the water (1) **accept** flame in diagram  
both fuels tested (1)  
comparison (1) **accept** any attempt at comparison

[Total: 60]