**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/$H_2$ produced **allow** bleach like smell [2]

**(b)** carbon/graphite/platinum (1) [1]

**(c)** hydrogen/$H_2$ (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/$CO_2$ 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]**

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