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.

Cambridge is publishing the mark schemes for the May/June 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.
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/H₂ produced allow bleach like smell [2]

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

(c) hydrogen/H₂ (1) not H [1]

(d) fume cupboard/ventilated area (1)
   protective clothing e.g. gloves/goggles/lab coat/tie back hair (1) [2]
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)
      (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/CO₂ 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]