

## **MARK SCHEME for the March 2015 series**

### **0620 CHEMISTRY**

**0620/62**

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 March 2015 series for most Cambridge IGCSE® components.

Page 2	Mark Scheme	Syllabus
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- 1 (a) thermometer (1)  
condenser (1)
- (b) (i) ethanoic acid (1)  
lower boiling point/evaporates first (1) [2]
- (ii) temperature reading will rise/gap in liquid coming over/no more collected at 118°C (1) [1]
- (c) larger surface area (1) [1]
- (d) test: named indicator/pH meter/pH paper (1)  
result: correct colour change/pH < 7 (1) [2]
- 2 (a) **Table of results**  
volume boxes completed correctly (3),  
all 7 correct (3)  
6 correct (2)  
5 correct (1)  
4 or fewer correct (0)  
  
0, 45, 48, 72, 74, 75, 75 [3]
- (b) points plotted correctly, including origin (3),  
all 7 correct (3)  
6 correct (2)  
5 correct (1)  
4 or fewer correct (0)  
  
Smooth line graph(1) [4]
- (c) (i) point at 2 min/3<sup>rd</sup> point/48 cm<sup>3</sup> (1)  
off curve (1) [2]
- (ii) reading from graph, 62–64 (cm<sup>3</sup>) (1)  
indication (1) [2]
- (d) curve to left of original (1)  
to same level (1) [2]

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- 3 (a) electrolysis (1)
- (b) aluminium would react/platinum is inert/less reactive (1) [1]
- (c) (i) chlorine (1)
- (ii) colourless/bleached/pale yellow (1) [2]
- 4 (d) **Table of results**
- total volume of water boxes completed correctly (1),
- 10, 12, 14, 18
- temperature boxes completed (2)
- all 4 correct (2)
- 3 correct (1)
- 2 or fewer correct (0)
- 91, 73, 65, 54 [3]
- (e) appropriate scale for y axis (1)
- note:** must use at least 4 large squares vertically to plot points
- all points correctly plotted (3),
- all 4 correct (3)
- 3 correct (2)
- 2 correct (1)
- 1 or fewer correct (0)
- note:** origin should not be included
- smooth line graph (1) [5]
- (f) value from graph for 20 cm<sup>3</sup> water, 50–53 (1) ± half a small square
- shown clearly by extrapolation (1)
- unit, °C (1) [3]

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(g) clear / colourless liquid forms / no solid / crystals / salt visible (1)

(h) salt would not all dissolve (1)

use of figures (1)

[2]

e.g. only 5.7 g would dissolve in 10 cm<sup>3</sup> water at 100 °C

(i) sketch graph always above line (1)

label (1)

[2]

(j) any **one** improvement from: (1)

do not remove thermometer from solution

use IT method / second person to note formation of crystals

repeat

do separate experiments

use smaller volumes of water

evaporation

linked explanation (1)

loss of solid on thermometer

observing formation of first crystals may vary

average

more results to plot on graph

method of avoiding evaporation e.g. separate experiments, lid

[2]

## 5 tests on solution E

(a) yellow / green / any combination of yellow / green

[1]

(b) white precipitate (1)

[1]

(c) (i) green (1) precipitate (1)

[2]

(ii) indicator paper turns blue (1)

pungent / sharp smell (1)

[2]

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(d) brown precipitate (1)

(g) hydrogen (1)

(h) any **two** from:  
transition metal (1)

different valencies / colours (1)

acidic solution (1)

[2]

6 any **seven** from:

**extraction**

cut leaves up / small pieces / grind / crush (1)

use of pestle / mortar (1)

add water (1)

sand (1)

boil / heat / stir / mix / shake (1)

**separation**

decant / filter (1)

**obtaining crystals**

evaporate / heat solution (1)

to crystallising point / until crystals start to form (1)

leave to cool (1)

[7]