

CAMBRIDGE INTERNATIONAL EXAMINATIONS**Cambridge International General Certificate of Secondary Education****MARK SCHEME for the March 2015 series****0620 CHEMISTRY****0620/52**

Paper 5 (Practical), maximum raw mark 40

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1 (d) Table of results

total volume of water boxes completed correctly (1),

10, 12, 14, 18

temperature boxes completed (1)

values decreasing (1)

comparable to supervisor's results (2) $\pm 10^\circ\text{C}$ [5]

(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^3 water (1) $\pm$ half a small square

shown clearly by extrapolation(1) [2]

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

(h) salt would not all dissolve (1)

use of figures (1)

e.g. only 5.7 g would dissolve in 10 cm^3 water at 100°C [2]

(i) sketch graph above line (1)

label (1) [2]

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(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
 loss of water through boiling/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

[2]

2 tests on solution E

(a) yellow / green / colourless,

[1]

(b) white (1) precipitate (1)

[2]

(c) green precipitate (1)
 indicator paper turns blue (1)

[1]

pungent smell (1)

[2]

turns brown (1)

[1]

(d) appearance pink to colourless / pale yellow (1)

[1]

brown (1) precipitate (1)

[2]

tests on solution F

(e) (i) yellow solution (1)

[1]

(ii) pH 1–3 (1)

[1]

(f) any **three** from:
 green (1) blue (1) lavender / purple / lilac (1)

effervescence (1)

[3]

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(g) iron (1) (II) (1)

ammonium (1) sulfate(1)

[4]

(h) any **two** from:

transition metal (1)

different valencies (1)

acidic solution(1)

[2]