

New
Specification



Rewarding Learning

ADVANCED
General Certificate of Education
2018

Chemistry
Assessment Unit A2 3
assessing
Further Practical Chemistry
Practical Booklet A
[ACH31]
THURSDAY 10 MAY, MORNING

MARK
SCHEME

1 (a) The table should:

- be boxed
- have headings
- have units included
- have appropriate numbers, i.e. temperature recorded to a whole number or 0.5, e.g. 18.5
- have temperature rise calculated correctly

e.g.

| volume of sulfuric acid /cm ³ | initial temperature /°C | final temperature /°C | temperature rise /°C |
|--|-------------------------|-----------------------|----------------------|
| 5 | 18 | 24 | 6 |
| 10 | 18 | 28 | 10 |
| 15 | 18 | 26 | 8 |
| 20 | 18 | 25 | 7 |
| 25 | 18 | 24 | 6 |

(-1 for each mistake)

the last column is not obligatory temperature rise or temperature change

[2]

(b) Add [1] the (two uncertainties) together [1]

[2]

(c) X: volume of (sulfuric) acid/cm³
Y: temperature change/°C

[1]

Points plotted correctly using the results table

[1]

The line/curve of best fit correctly drawn

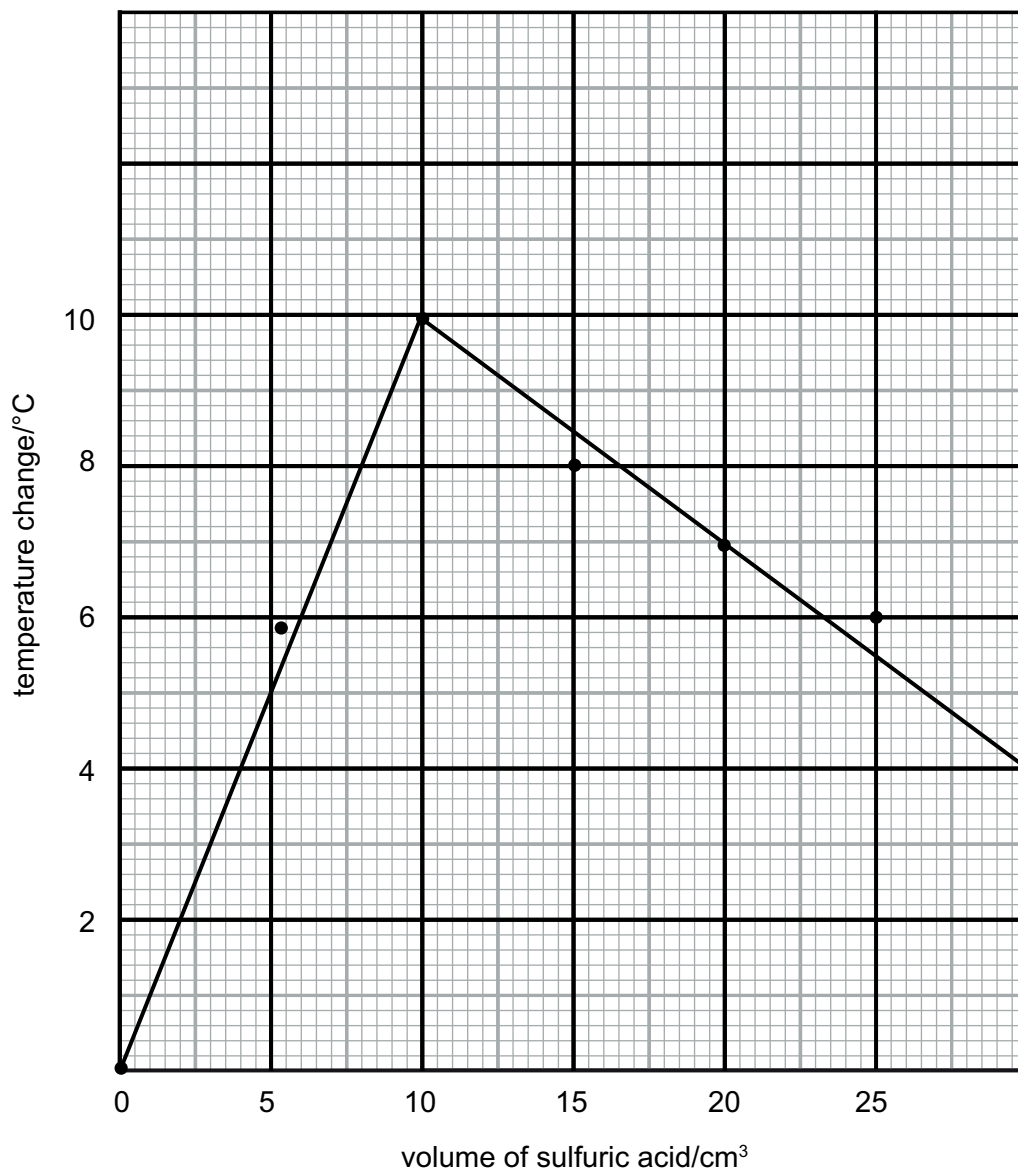
[1]

0,0 point used

[1]

AVAILABLE MARKS

8

AVAILABLE
MARKS

- 2 A = Copper(II) oxide
B = Zinc oxide
- (a) Blue solution formed and black solid disappears/remains [1]
- (b) (i) Blue precipitate [1]
- (ii) Blue colour fades [1] heat produced [1]
Red/brown solid forms [1] fizz/effervescence [1] [4]
- (iii) Turns yellow/green [1]
- (c) (i) White solid turns yellow [1]
- (ii) Yellow solid turns white [1]
- (d) (i) (White solid) dissolves/disappears [1]
- (ii) White [1] precipitate [1] [2]

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3 X = propanone; Y = ethanol; Z = ethanoic acid

| Test | Observations | | |
|---|--|--|---------------------------|
| | X | Y | Z |
| Place 2 cm ³ of the liquid in a test tube and add 2–3 cm ³ of dilute sulfuric acid followed by 2 cm ³ of potassium manganate(VII) solution. Leave the test tube for 5 minutes. | No change/ reaction | Solution turns from purple to colourless | No change/ reaction |
| Test each liquid with Universal Indicator solution. Record the pH of the liquid in the test tube. | pH 7 | pH 7 | pH 2–4 |
| Place a few drops of the liquid on a watch glass and carefully touch the liquid with a lighted splint. | Burns with a yellow/orange flame | Burns with a yellow-blue flame | Does not burn |
| Place 2 cm ³ of the liquid in a test tube and add 1 cm of magnesium ribbon. | No change/ reaction | No change/ reaction | Effervescence /fizzing |

[-1] for each error

[10]

Total

AVAILABLE
MARKS

10

30