

MARK SCHEMES – Chemistry Unit 4 homework

Q1 (c) water	1
(d) opposite charges attract	1
(e) silver is less reactive than hydrogen	1
(f) oxygen	1
(g) universal indicator <i>allow other indicators</i>	1
blue / purple	1

[8]

Q2 Level 3 (5–6 marks):

A coherent method is described with relevant detail, which demonstrates a broad understanding of the relevant scientific techniques, procedures and safety precautions. The steps in the method are logically ordered with the dependent and control variables correctly identified. The method would lead to the production of valid results.

Level 2 (3–4 marks):

The bulk of a method is described with mostly relevant detail, which demonstrates a reasonable understanding of the relevant scientific techniques, procedures and safety precautions. The method may not be in a completely logical sequence and may be missing some detail.

Level 1 (1–2 marks):

Simple statements are made which demonstrate some understanding of some of the relevant scientific techniques, procedures and safety precautions. The response may lack a logical structure and would not lead to the production of valid results.

0 marks:

No relevant content

Indicative content

Named chemicals

- copper oxide
- sulfuric acid
- copper sulfate

Correct use of apparatus

- stirring rod
- spatula
- beaker
- filter funnel and filter paper
- evaporating basin
- Bunsen burner
- tripod and gauze
- bench mat
- conical flask

Method

- add (excess) copper oxide to sulfuric acid
- heat the mixture
- filter the mixture
- method to evaporate some of the water from the filtrate eg using a water bath or evaporating to half volume
- leave solution (to cool and) to form crystals
- remove and dry crystals

Safety

- wearing of safety glasses / goggles
- care with use of sulfuric acid as corrosive
- warming not boiling mixture of copper oxide and sulfuric acid
- hold beaker containing warm mixture with tongs whilst filtering

[6]



allow multiples

1

(b) (sodium) gains oxygen

1

(c) purple

1

(d) aluminium chloride

1

Q4 (a) Whether there was a reaction or not

1

(b) (Most reactive) **Magnesium**
Zinc
(Least reactive) **Copper**

must all be correct

1

(c) would not be safe **or**

too reactive

allow too dangerous

(d) carbon

1

(e) Loss of oxygen

1