

**Salts Past Paper Questions GCSE AQA**

1.

0 1

Soluble salts are formed by reacting metal oxides with acids.

0 1 . 1

Give **one** other type of substance that can react with an acid to form a soluble salt.

[1 mark]

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0 1 . 2

Calcium nitrate contains the ions  $\text{Ca}^{2+}$  and  $\text{NO}_3^-$

Give the formula of calcium nitrate.

[1 mark]

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0 1 . 3

Describe a method to make pure, dry crystals of magnesium sulfate from a metal oxide and a dilute acid.

[6 marks]

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2.

Rock salt is a mixture of sand and salt.

Salt dissolves in water. Sand does **not** dissolve in water.

Some students separated rock salt.

This is the method used.

1. Place the rock salt in a beaker.
2. Add 100 cm<sup>3</sup> of cold water.
3. Allow the sand to settle to the bottom of the beaker.
4. Carefully pour the salty water into an evaporating dish.
5. Heat the contents of the evaporating dish with a Bunsen burner until salt crystals start to form.

- 1** Suggest **one** improvement to step 2 to make sure all the salt is dissolved in the water.

**[1 mark]**

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- 2** The salty water in step 4 still contained very small grains of sand.

Suggest **one** improvement to step 4 to remove all the sand.

**[1 mark]**

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- 3** Suggest **one** safety precaution the students should take in step 5.

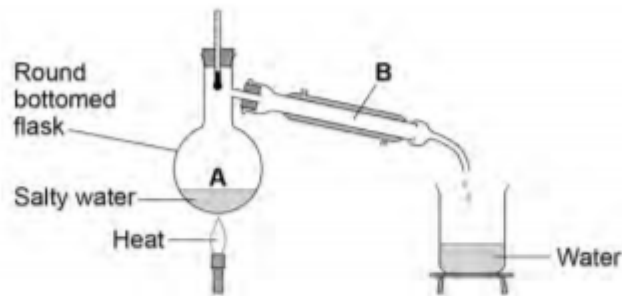
**[1 mark]**

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Another student removed water from salty water using the apparatus in **Figure 3**.

**Figure 3**



- ]. **4** Describe how this technique works by referring to the processes at **A** and **B**.

**[2 marks]**

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- ]. **5** What is the reading on the thermometer during this process?

**[1 mark]**

\_\_\_\_\_ °C

3.

Sulfuric acid reacts with metal oxides.



In a reaction, 159 g of copper oxide reacts with 196 g of sulfuric acid.

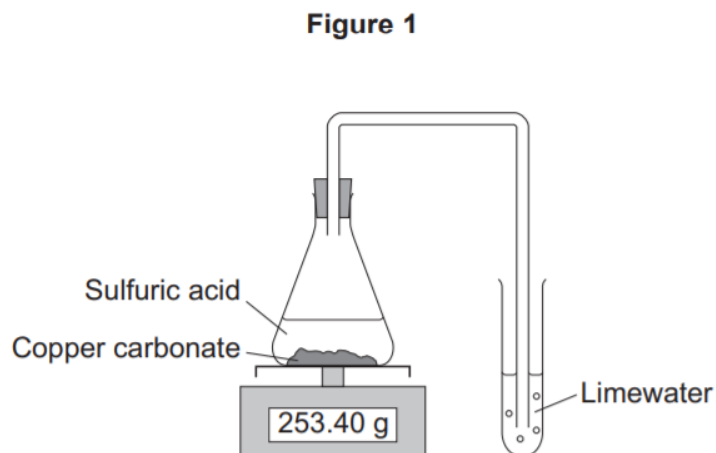
What is the mass of the products?

Tick (✓) **one** box.

Mass of copper sulfate in g	Mass of water in g	Tick (✓)
30	7	
159	36	
196	18	
319	36	

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Figure 1 shows apparatus used to investigate the reaction of sulfuric acid with copper carbonate.



Describe and explain the changes seen during the reaction.

[3 marks]

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5.

This question is about sulfuric acid ( $\text{H}_2\text{SO}_4$ ) and ethene.

Sulfuric acid is used to produce copper sulfate ( $\text{CuSO}_4$ ).

The equation for the reaction is:



Describe a method for making copper sulfate crystals from copper oxide and sulfuric acid.

[4 marks]

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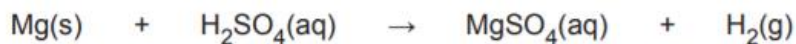
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6.

Magnesium sulfate is a salt of magnesium.

It can be prepared by the reaction of magnesium metal with an acid. The equation for the reaction of magnesium with this acid is:



(i) Name the acid used to make magnesium sulfate.

..... acid  
(1 mark)

(ii) Use the equation to help you to describe what you would **observe** when magnesium reacts with the acid.

.....  
 .....  
 .....  
 .....  
 .....  
 .....  
 (2 marks)

(iii) The magnesium sulfate is in solution.

How could you obtain solid magnesium sulfate from this solution?

.....  
 .....  
 (1 mark)

7.

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A student investigated the reactions of copper carbonate and copper oxide with dilute hydrochloric acid.

In both reactions one of the products is copper chloride.

] Describe how a sample of copper chloride crystals could be made from copper carbonate and dilute hydrochloric acid.

**[4 marks]**

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