

AQA Chemistry GCSE

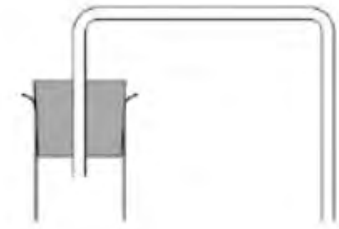
Required Practical 8 - Water Purification Past Exam Questions

Q1 a) Some countries make drinking water from sea water.

Complete the figure below to show how you can distil salt solution to produce and collect pure water.

Label the following:

- pure water
- salt solution



(3)

(b) How could the water be tested to show it is pure?

Give the expected result of the test for pure water.

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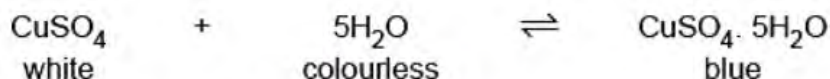
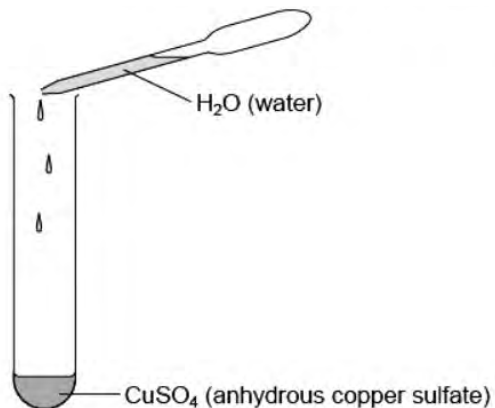
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(2)

Q2. The diagram shows how anhydrous copper sulfate can be used to test for water.

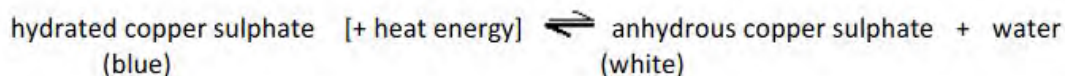


(a) What colour change will you see when water is added to the CuSO₄?

Colour changes from to

(1)

Q3. Hydrated copper sulphate is a blue solid. When it is heated, white solid anhydrous copper sulphate is made. This is a reversible reaction.



(a) To make the forward reaction work, the hydrated copper sulphate must be heated all the time.

What type of reaction is this?

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(1)

(b) Anhydrous copper sulphate can be used in a test for water. What two things will happen when water is added to anhydrous copper sulphate?

1

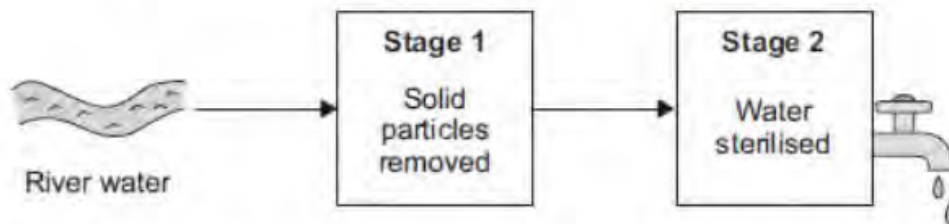
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2

(2)
(Total 3 marks)

Q4. This question is about water. River water needs to be treated before it is safe to drink.

(a) The diagram shows two stages of the treatment of river water.



(i) What is the name of the process used to remove solid particles in **Stage 1**?

Tick (✓) **one** box.

Crystallisation

Fermentation

Filtration

(1)

(ii) What is added in **Stage 2** to sterilise the water?

Tick (✓) **one** box.

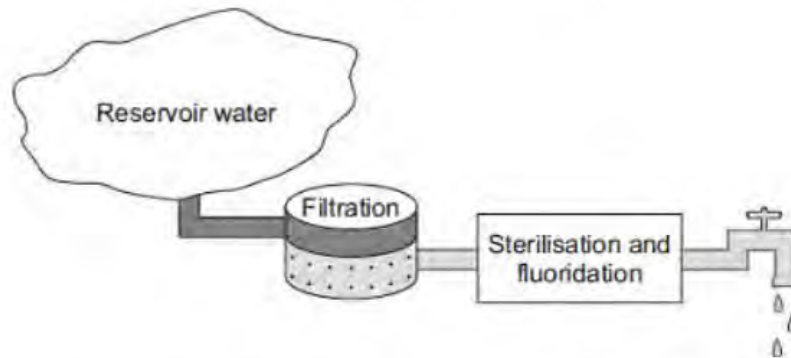
Chlorine

Fluoride

Potassium

(1)

Q5. The diagram shows three stages in the treatment of reservoir water.



(a) (i) What is separated from the reservoir water during filtration?

Tick (✓) one box.

Bacteria

Dissolved nitrates

Solids

(1)

(ii) What is added to sterilise the water?

Tick (✓) one box.

Calcium

Chlorine

Magnesium

(1)

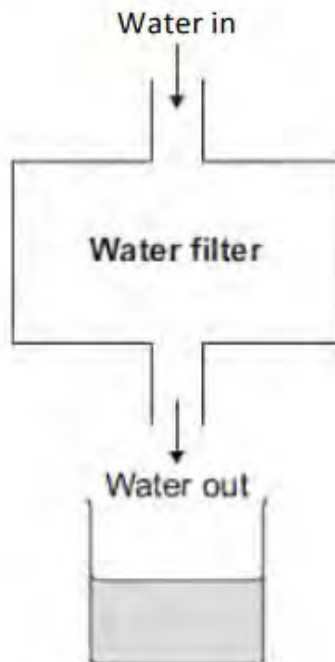
(iii) State one advantage of adding fluoride to drinking water.

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(1)

(b) The diagram shows a water filter used in the home.



A student collected a sample of water from the filter.
The student could show that the filtered water contains dissolved salts without using a chemical test.

Describe how.

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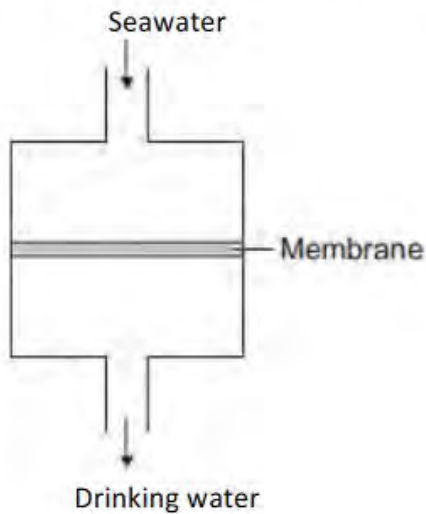
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(2)

(c) Seawater is forced through a membrane to make drinking water.



Suggest why water molecules can pass through the membrane, but sodium ions and chloride ions cannot.

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(1)

(Total 6 marks)

Q6. Good quality water is needed for a healthy life.

In the United Kingdom, obtaining safe water for drinking is as simple as turning on a tap. The water is made safe to drink by water companies.

However, in many parts of Africa and Asia, water used for drinking is contaminated and untreated. It is estimated that 2.2 million people die each year as a result of drinking contaminated water.



DADA DANESHANANDA, Man with filtered water from the Mafi-Zongo water project. www.amurt.net/africa/ghana/2005

(a) Sea water is not used as drinking water.
Suggest why.

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(1)

(b) Explain why water for drinking is filtered and then treated with chlorine.

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.....
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(2)

(Total 3 marks)

Q7. Water in Britain is taken from reservoirs to use as drinking water.



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(a) What are the two main steps used to treat water from reservoirs?
Give one reason for each step.

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(4)

(b) Some people use water filters to treat water before drinking it.

(i) Water filters remove hardness from hard water.

What is in water filters that removes hardness from water?

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(1)

(ii) Suggest why water filters used in the home contain particles of silver.

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(1)

(c) Pure water can be produced by distillation. Why is distillation not usually an economic method of treating water for drinking?

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(1)

(d) Drinking hard water has health benefits.

State one health benefit of drinking hard water.

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(1)

(Total 8 marks)