

(Potable water and water treatment (practical methods))

Q1.(2019)

This question is about drinking water.

There are two main steps in producing drinking water from fresh water.

Draw **one** line from each step to the reason for the step.

[2 marks]

Step	Reason for step
	Desalination
Filtration	Improve taste
	Increase pH
Sterilisation	Kill bacteria
	Remove solids

Q2.(2019)

Which **two** substances are used to sterilise fresh water?

[2 marks]

Tick (✓) **two** boxes.

Ammonia	☐
Chlorine	☐
Hydrogen	☐
Nitrogen	☐
Ozone	☐

Q3.(2019)

How could pure water be produced from drinking water that contained dissolved solids?

[1 mark]

Tick (✓) **one** box.

Chromatography

☐

Cracking

☐

Distillation

☐

Sedimentation

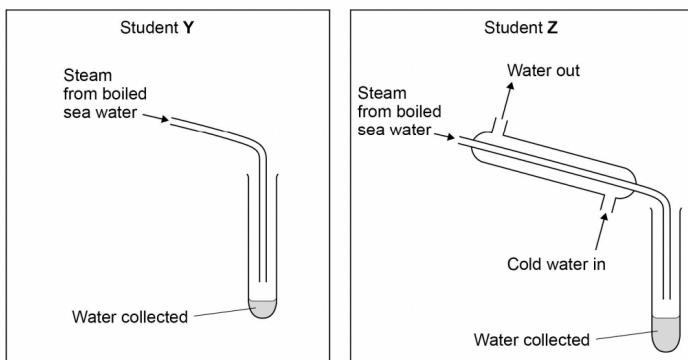
☐

Q4.a)(2021)

Two students, **Y** and **Z**, distil sea water to collect water.

Figure 1 shows the apparatus used by each student to collect the water.

Figure 1



Students **Y** and **Z** boil the same volume of sea water for the same period of time.

Explain why student **Y** collects a smaller volume of water than student **Z**.

[2 marks]

Q4.b)(2021)

Water obtained by distillation does **not** need to be sterilised and is safe to drink.

Suggest why.

[1 mark]

Q4.c)(2021)

Fresh water needs to be sterilised before it is safe to drink.

How is fresh water sterilised?

[2 marks]

Tick (✓) **two** boxes.

Using ammonia

☐

Using chlorine

☐

Using chromatography

☐

Using filtration

☐

Using ozone

☐

Q4.d)(2021)

A student tests the pH of fresh water using universal indicator solution.

When added to the fresh water, the colour of the universal indicator solution is green.

What is the pH of this fresh water?

[1 mark]

pH = _____

Q5.a)(2022)

This question is about water.

A student investigated pure water.

The student measured:

- the boiling point of pure water
- the pH of pure water.

Complete the sentences.

Choose answers from the box.

[2 marks]

0	4	7	10	25	100
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Pure water has a boiling point of _____ °C.

Pure water has a pH of _____.

Q5.b)(2022)

What could the student use to measure the pH of pure water?

[1 mark]

Q6.(2024)

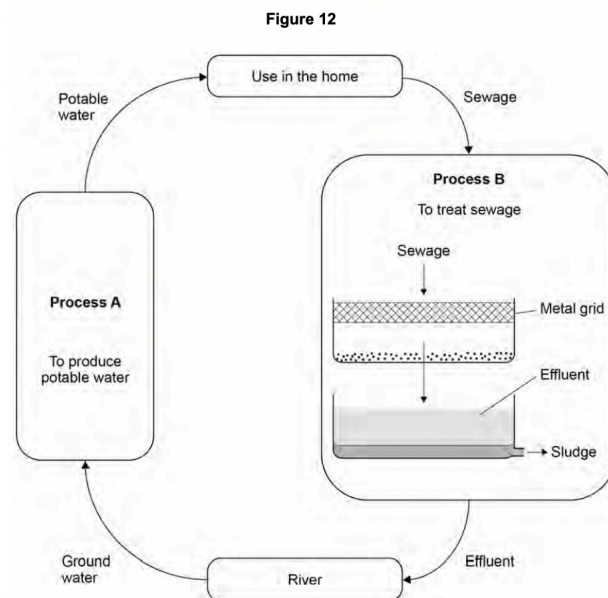
Water collected from rivers is used in the home for drinking and flushing toilets.

Water used in the home must be potable.

Potable water is safe to drink.

Waste water produced after use in the home is called sewage.

Figure 12 shows how water is collected from rivers and returned to rivers after use.



Q7.(2020)

This question is about water.

In the UK, potable (drinking) water is produced from different sources of fresh water.

Explain how potable water is produced from fresh water.

[4 marks]

Q8.(2020)

Using Resources

<http://www.pcfgstudy.com>

A different country has:

- very little rainfall
- a long coastline
- plentiful energy supplies.

Suggest **one** process this country could use to obtain most of its potable water.

[1 mark]

Q9.(2020)

Waste water is not fit to drink.

Treatment of waste water produces two substances:

- liquid effluent
- solid sewage sludge.

Draw **one** line from each substance to the way the substance is processed.

[2 marks]

Substance	Process
	Aerobic biological treatment
Liquid effluent	Anaerobic digestion
	Grit removal
Solid sewage sludge	Screening
	Sedimentation

Q10.a)(2020)

Table 6 shows information about the disposal of processed solid sewage sludge in the UK in 1992 and in 2010.

Table 6

Year	Mass of processed solid sewage sludge in millions of kilograms				
	Used as fertiliser	Sent to landfill	Burned	Other methods	Total
1992	440	130	90	338	998
2010	1118	9	260	26	1413

Calculate the percentage of processed solid sewage sludge that was burned in 2010.

Give your answer to 3 significant figures.

Use **Table 6**.

[3 marks]

Percentage (3 significant figures) = _____ %

Q10.b)(2020)

Suggest **one** reason why the total mass of processed solid sewage sludge increased between 1992 and 2010.

[1 mark]

Q10.c)(2020)

Between 1992 and 2010 the proportion of processed solid sewage sludge used as fertiliser increased.

Suggest **two** reasons why.

[2 marks]

1 _____

2 _____
