

**AQA, OCR, Edexcel**

**GCSE Science**

# **GCSE Chemistry**

**Water, Waste and Treatment  
Answers**

**M M E**

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**Total Marks: /26**

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Q1: Give an example of what humans use the Earth's resources for.

A= Warmth, shelter, food and transport, containers, plastics etc.

(1 mark)

Q2: What is sustainable development?

A= development that meets the needs of current generations (1 mark) without compromising the ability of future generations to meet their own needs (1 mark)

(2 marks)

Q3: What is meant by a finite resource?

A resource that can run out/ will run out

(1 mark)

### **Potable water**

Q4: What is potable water?

A= water that is safe to drink (1 mark). It is not pure in the chemical sense because it contains dissolved substances/ treated water (1 mark)

(2 marks)

Q5: For humans, what makes drinking water safe?

A= addition of chemicals/chlorine/ filtering (1 mark) resulting in sufficiently low levels of dissolved salts and microbes (1 mark)

(2 marks)

Q6: In the UK, how is potable water produced?

A= Rain provides water with low levels of dissolved substances (1 mark) this collects in the ground and in lakes and rivers (1 mark). It is produced by choosing an appropriate source of fresh water (1 mark), passing the water through filter beds (1 mark) then sterilising (1 mark)

(4 marks)

Q7: Give two examples of sterilizing agents that are used for potable water.

A= Chlorine/ozone/ UV light

(2 marks)

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Q8: What processes can be carried out when supplies of fresh water are limited?

A= desalination of salty water or sea water (1 mark). This is done by distillation or processes that use membranes such as reverse osmosis (1 mark)

(2 marks)

***Waste water treatment***



Q9: Waste water like this needs to be treated before being released into the environment. This waste water may require removal of organic matter and harmful chemicals. List the steps of sewage treatment.

A= screening and grit removal (1 mark), sedimentation to produce sewage sludge and effluent waste (1 mark), anaerobic digestion of sewage sludge (1 mark), aerobic biological treatment of effluent (1 mark)

(4 marks)

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Q10:



Copper ores like the one above are becoming scarce. Give two examples of new ways of extracting copper from the ore.

1. Phytomining (1 mark)
2. Bioleaching (1 mark)

(2 marks)

Q11: Explain how the two methods work.

A= Phytomining uses plants to absorb metal compounds (1 mark). The plants are harvested and then burned to produce ash that contains metal compounds (1 mark).

A= Bioleaching uses bacteria (1 mark) to produce solutions that contain metal compounds (1 mark)

(4 marks)