AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 5.8.2.2

Test for oxygen

Past-paper questions

Tier	**Foundation**
Question groups	**3**
Available paper years	**2019–2025**

Using this booklet

1. Answer the questions in order and show your working.
2. Original question numbers and marks are retained.
3. Print at actual size (100%) for measuring questions.
4. Use the companion answer booklet to check your work.

Name: _____ **Date:** _____

Whole questions are retained for context, so some parts assess other specification points. Current and legacy sources are labelled. Continue on extra paper if needed.

5.8.2.2 Test for oxygen

Question 01

June 2019 | 8464/C/2F | Original Q1

0 1 . 1 This question is about gases.

Draw **one** line from each substance to the description of the substance.

[3 marks]

Substance	Description of substance
	Compound
Air	Element
Carbon dioxide	Hydrocarbon
Oxygen	Metal
	Mixture

5.8.2.2 Test for oxygen

Question 01 · continued

0 1 . 2 What is used to test for each of the gases?

Draw **one** line from each gas to the test for the gas.

[2 marks]

Gas	Test
Carbon dioxide	A glowing splint
Oxygen	A lighted splint
	Limewater
	Litmus paper

0 1 . 3 Give **two** reasons why the percentage of carbon dioxide in the air has decreased in the last 2.7 billion years.

[2 marks]

Tick (✓) **two** boxes.

- Combustion ☐
- Dissolved in oceans ☐
- Intense volcanic activity ☐
- Photosynthesis ☐
- Respiration ☐

5.8.2.2 Test for oxygen

Question 01 · continued June 2019 | 8464/C/2F | Original Q1

Oxygen reacts with sulfur dioxide.

The reaction is reversible.

0 1 . 4 What is the symbol for a reversible reaction?

[1 mark]

_____

0 1 . 5 Complete the sentence.

[1 mark]

In a reversible reaction the forward reaction is exothermic, so the

reverse reaction is _____ .

0 1 . 6 A reversible reaction happens in apparatus which stops the escape of reactants and products.

Complete the sentence.

[1 mark]

Equilibrium is reached when the forward and reverse reactions happen at

exactly the same _____ .

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5.8.2.2 Test for oxygen

Question 02

June 2022 | 8464/C/2F | Original Q1

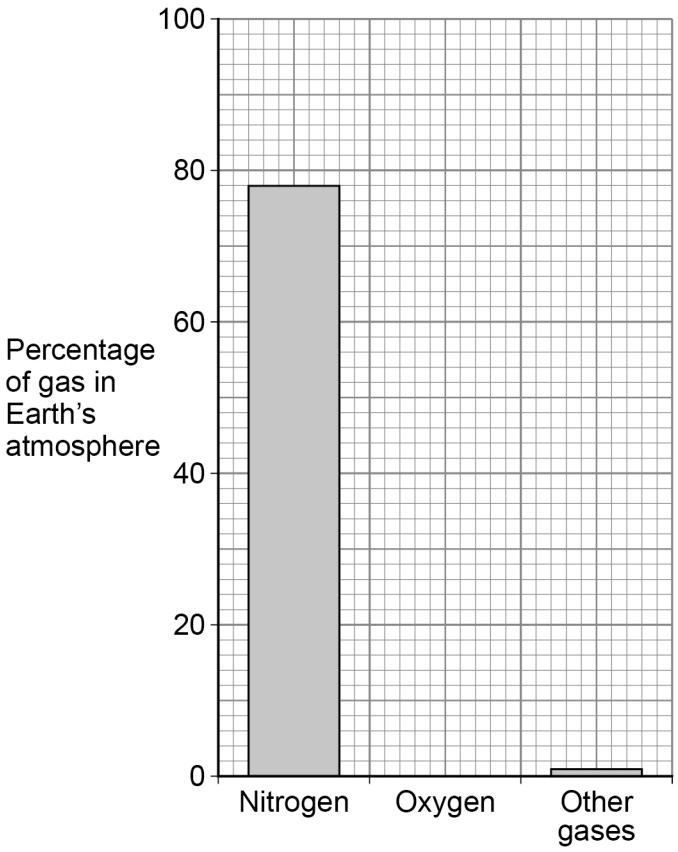
0 1 This question is about the Earth's atmosphere.

0 1 . 1 The Earth's atmosphere contains 21% oxygen.

Draw the bar for oxygen on **Figure 1**.

[1 mark]

Figure 1



0 1 . 2 What is used to test for oxygen gas?

[1 mark]

Tick (✓) **one** box.

- A burning splint ☐
- A glowing splint ☐
- Damp litmus paper ☐
- Limewater ☐

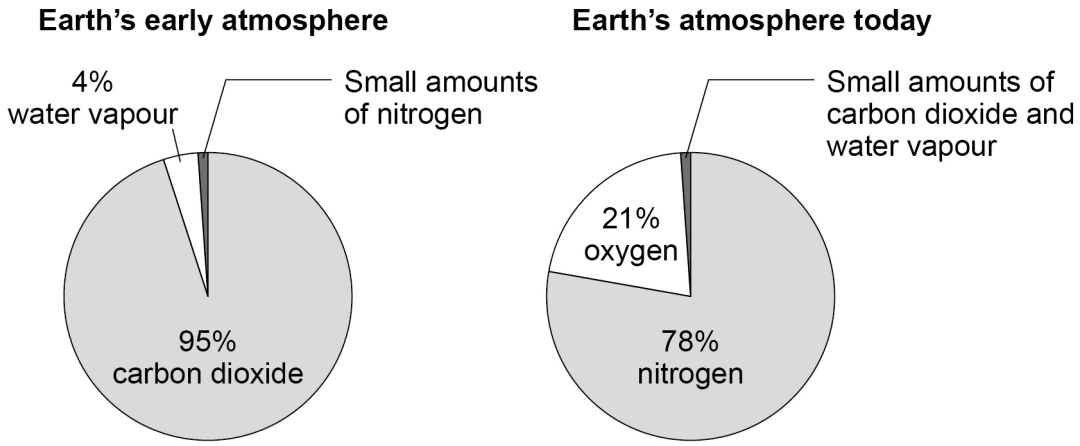
5.8.2.2 Test for oxygen

Question 02 · continued

The Earth's early atmosphere was very different from the Earth's atmosphere today.

Figure 2 shows the composition of the Earth's early atmosphere and of the Earth's atmosphere today.

Figure 2



0 1 . 3 The percentages of nitrogen and oxygen in the Earth's atmosphere today are different from the Earth's early atmosphere.

Complete the sentences.

Choose answers from the box.

Use **Figure 2**.

Each answer can be used once, more than once or not at all.

[2 marks]

decreased	**increased**	**stayed the same**

Since the Earth's early atmosphere, the percentage of nitrogen in the Earth's atmosphere has _____ .

Since the Earth's early atmosphere, the percentage of oxygen in the Earth's atmosphere has _____ .

5.8.2.2 Test for oxygen

Question 02 · continued

0 1 . 4 The Earth's atmosphere today contains a small amount of carbon dioxide.

Why has the percentage of carbon dioxide decreased since the Earth's early atmosphere?

[2 marks]

Tick (✓) **two** boxes.

- Dissolved in oceans ☐
- Formation of sedimentary rocks ☐
- Industrialisation ☐
- Respiration ☐
- Volcanic activity ☐

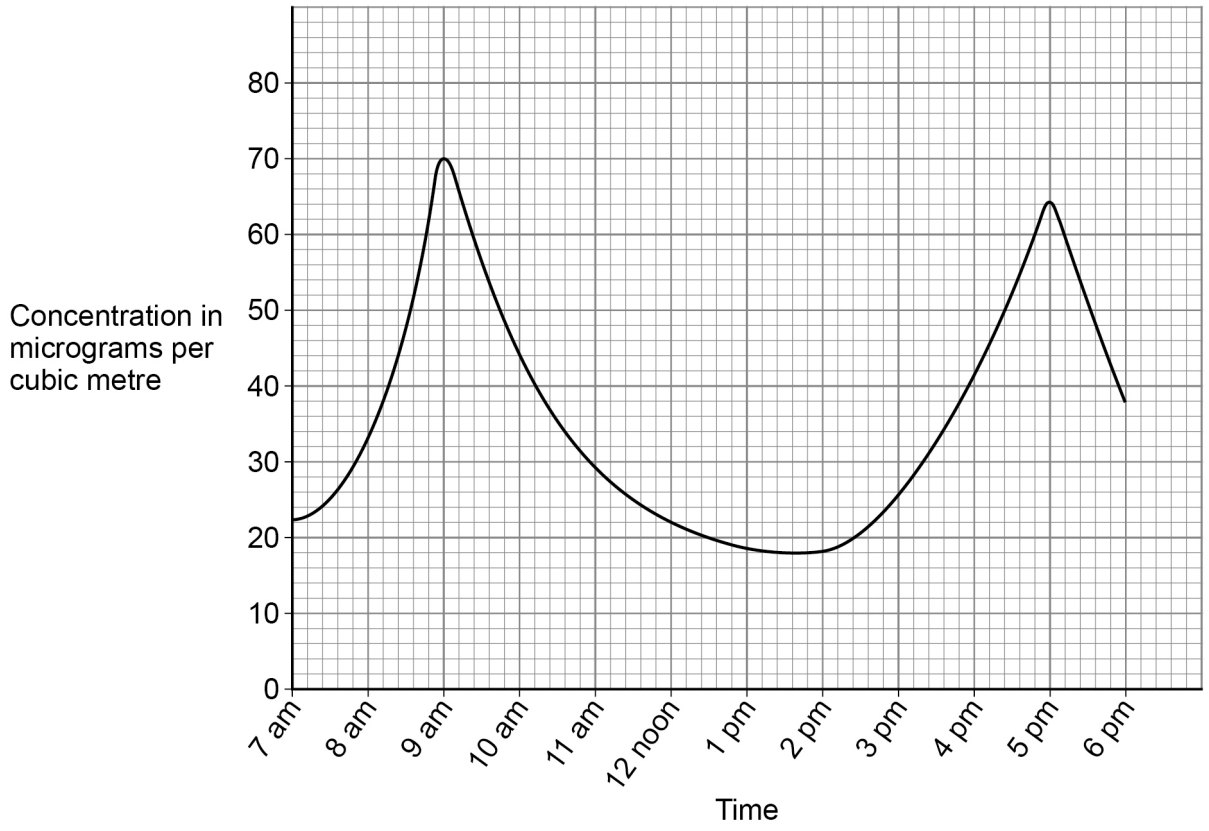
5.8.2.2 Test for oxygen

Question 02 · continued

Oxides of nitrogen are produced when nitrogen reacts with oxygen in car engines.

Figure 3 shows the concentration of oxides of nitrogen in the atmosphere during one day in a city.

Figure 3



0 1 . 5 Which **two times** have the highest concentrations of oxides of nitrogen in the atmosphere?

[2 marks]

1 _____

2 _____

0 1 . 6 Suggest why there are the highest concentrations of oxides of nitrogen at these times.

[1 mark]

_____

_____

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5.8.2.2 Test for oxygen

Question 03

0 6 The proportions of most gases in the Earth's atmosphere have not changed much for the past 200 million years.

0 6 . 1 About one-fifth of the atmosphere is oxygen.

Describe the test for oxygen gas.

Give the result of the test.

[2 marks]

Test _____

_____

Result _____

_____

0 6 . 2 **Table 5** shows the percentages of some gases in the Earth's early atmosphere and in the Earth's atmosphere today.

Table 5

	Percentage (%) of gas in the atmosphere	
Gas	**Earth's early atmosphere**	**Earth's atmosphere today**
Carbon dioxide	95	0.04
Nitrogen	3	78.0
Oxygen	Less than 1	21.0

5.8.2.2 Test for oxygen

Question 03 · continued

Explain how the percentages of gases have changed from Earth's early atmosphere to Earth's atmosphere today.

You should refer to all three gases in **Table 5**.

[6 marks]

Extra space

0 6 . 3 Methane is a greenhouse gas.

Give **two** ways to reduce methane emissions into the atmosphere.

[2 marks]

1

2

5.8.2.2 Test for oxygen

Question 03 · continued

The percentage of sulfur dioxide in the Earth's atmosphere increased between 1850 and 1980.

0 6 . 4 Describe how sulfur dioxide emissions are produced.

[2 marks]

0 6 . 5 Give **one** harmful effect of sulfur dioxide emissions.

[1 mark]

0 6 . 6 Suggest **one** reason why the percentage of sulfur dioxide in the Earth's atmosphere has decreased since 1980.

[1 mark]

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