

(The Earth's early atmosphere and its evolution)

Q1. a). (2018)

The Earth's early atmosphere was different to Earth's atmosphere today.

Scientists think that the Earth's early atmosphere was like the atmosphere found on Venus today.

Table 2 shows the amounts of carbon dioxide and oxygen in the atmospheres of Venus and Earth today.

Table 2

Gas	Percentage (%) in Venus' atmosphere today	Percentage (%) in Earth's atmosphere today
Carbon dioxide	96.50	0.04
Oxygen	0.00	20.95

The percentages of carbon dioxide and oxygen have changed from Earth's early atmosphere to Earth's atmosphere today.

Explain the processes that led to these changes.

[6 marks]

Q1. b). (2018)

Why are scientists **not** certain about the percentage of each gas in the Earth's early atmosphere?

[1 mark]

Q2. (2019)

Titan is a moon of the planet Saturn.

Table 3 shows the percentages of the gases in the atmosphere of Titan.**Table 3**

Gas	Percentage of gas in atmosphere (%)
Nitrogen	98.4
Methane	1.4
Other gases	0.2

Some scientists think that living organisms could have evolved on Titan.

Explain why these organisms could **not** have evolved in the same way that life is thought to have evolved on Earth.Use **Table 3**.**[3 marks]**

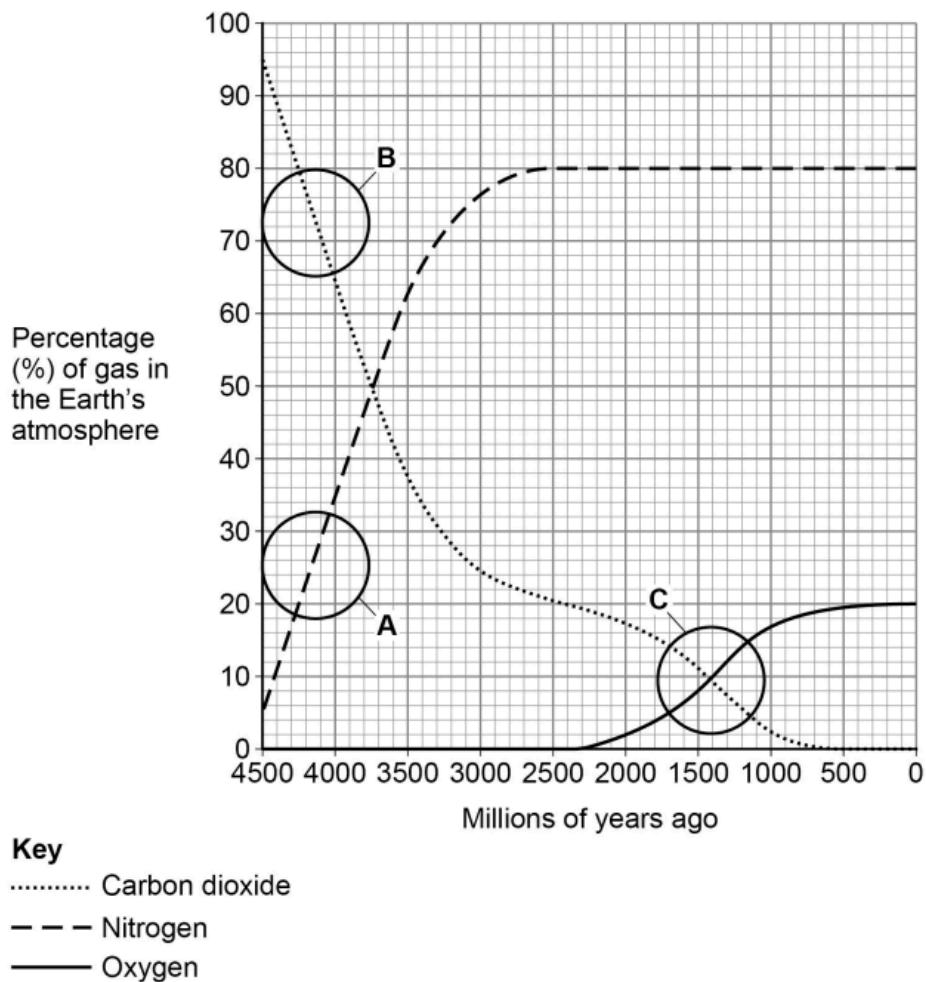
Q3. a). (2022)

This question is about the chemistry of the Earth's atmosphere.

Figure 3 shows how the percentages of gases in the Earth's atmosphere may have changed since the atmosphere was formed.

Figure 3

Figure 3



Explain the change in the percentage of gas in the region labelled **A** on **Figure 3**.
[2 marks]

Q3. b). (2022)

Explain the change in the percentage of gas in the region labelled **B** on **Figure 3**.
[2 marks]

Q3. c). (2022)

Compare the changes in the percentages of gases in the region labelled **C** on
Figure 3.
[2 marks]

Q3. d). (2022)

What process caused the changes in the percentages of gases in the region labelled **C** on **Figure 3**?

[1 mark]

Q4. (2022)

Natural gas is a fossil fuel.

Describe how deposits of natural gas were formed.

[3 marks]
