

# Earth and atmosphere

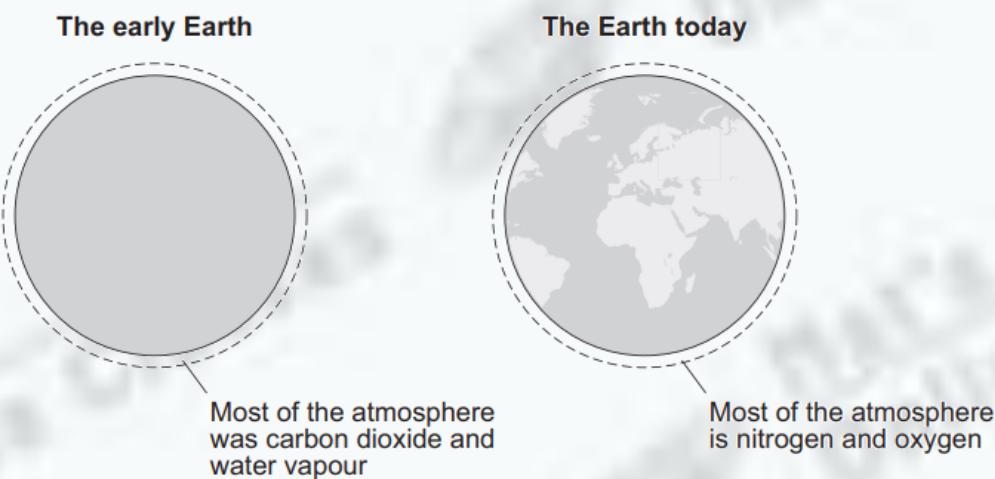
**Total mark – 19**

## Question: 1

1 This question is about gases in the Earth's atmosphere.

Figure 1 shows the atmospheres of the early Earth and of the Earth today.

**Figure 1**



1 (a) (i) Use the correct answers from the box to complete the sentence.

[2 marks]

dissolved	evaporated
locked up	released

The amount of carbon dioxide in the early Earth's atmosphere decreased because

carbon dioxide was \_\_\_\_\_ in the oceans

and gradually became \_\_\_\_\_ in sedimentary rocks as carbonates.

1 (a) (ii) Plants and algae used carbon dioxide and water vapour in the early Earth's atmosphere to produce oxygen.

Give the name of this process.

[1 mark]

1 (b) The Earth's atmosphere today contains about 0.04% carbon dioxide.

1 (b) (i) Draw **one** line from each gas to the approximate percentage of gas in the Earth's atmosphere today.

[3 marks]

Gas	Approximate percentage of gas in the Earth's atmosphere today
	1
Argon	10
	20
Nitrogen	50
	80
Oxygen	90

1 (b) (ii) Give **one** reason why the amount of carbon dioxide in the Earth's atmosphere has increased in the last 50 years.

[1 mark]

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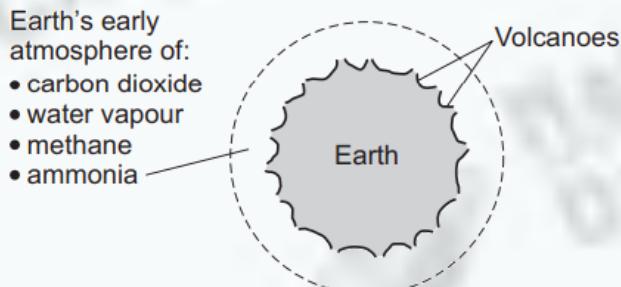
Question	Answers	Extra information	Mark	AO / Spec. Ref.
1(a)(i)	dissolved locked up		1 1	AO1 1.7.2g;h
1(a)(ii)	photosynthesis		1	AO1 1.7.2f
1(b)(i)	argon - 1 nitrogen - 80 oxygen - 20	each mark is awarded for <u>one</u> line from each gas to the correct percentage	1 1 1	AO1 AO3 1.7.2a
1(b)(ii)	(burning) fossil fuels	allow deforestation <b>or</b> a description allow (increase in) transport / factories ignore more people <b>or</b> population (increase)	1	AO1 1.7.2i
<b>Total</b>			<b>7</b>	

## **Question: 2**

**2** This question is about the Earth and its atmosphere.

**2 (a)** Figure 4 shows the Earth and its atmosphere billions of years ago.

**Figure 4**



**2 (a) (i)** The boiling point of water is 100 °C.

Suggest **one** reason why there was no liquid water on the Earth's surface billions of years ago.

**[1 mark]**

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**2 (a) (ii)** Complete the sentence.

**[1 mark]**

On the Earth today, volcanic eruptions happen at the boundaries between tectonic \_\_\_\_\_.

**2 (b)** The Earth's atmosphere today contains nitrogen, oxygen, argon, carbon dioxide and other gases.

**2 (b) (i)** Draw **one** line from each substance to a description of the substance.

**[3 marks]**

Substance	Description of the substance
air	compound
carbon dioxide	element
argon	hydrocarbon
	metal
	mixture

**2 (b) (ii)** Which gas in the Earth's atmosphere is used when hydrocarbons burn?

**[1 mark]**

Tick (✓) **one** box.

carbon dioxide

nitrogen

oxygen

**2 (b) (iii)** What percentage of the Earth's atmosphere is nitrogen?

**[1 mark]**

Tick (✓) **one** box.

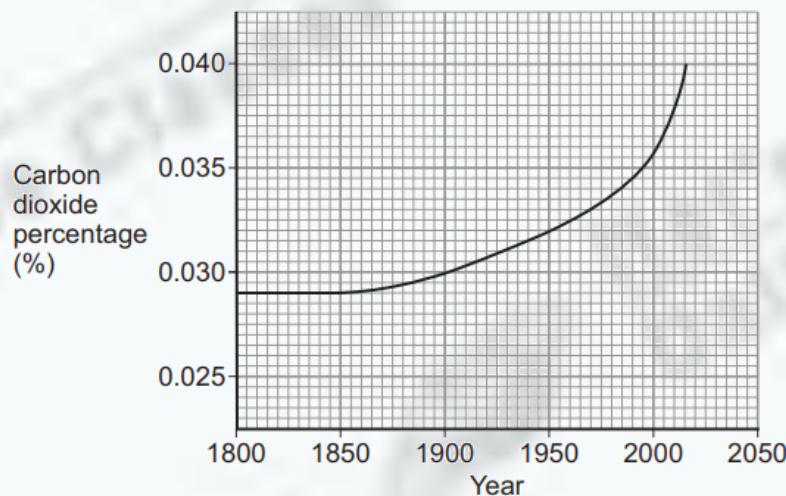
about 40%

about 60%

about 80%

2 (c) **Figure 5** shows the carbon dioxide percentage (%) in the Earth's atmosphere since the year 1800.

**Figure 5**



2 (c) (i) What was the carbon dioxide percentage in 1900?

[1 mark]

\_\_\_\_\_ %

2 (c) (ii) Describe, in detail, how the carbon dioxide percentage changed from 1900 to 2015.

[2 marks]

\_\_\_\_\_

\_\_\_\_\_

**Question 2**

Question	Answers	Extra information	Mark	AO / Spec. Ref.
2(a)(i)	the Earth's (surface) temperature was high <b>or</b> at/above 100 °C	allow the Earth's (surface) temperature was too/very hot <b>or</b> water evaporated/ boiled <b>or</b> turned to steam/gas allow because of heat from volcanoes ignore the Earth's (surface) was covered by volcanoes ignore water turned to water vapour	1	AO3 1.7.2b
2(a)(ii)	plates	allow plate	1	AO1 1.7.1d
2(b)(i)	air _____ mixture carbon dioxide _____ compound argon _____ element	allow only one line from each substance	1 1 1	AO1 1.1.1a; 1.1.3a; 1.7.2a
2(b)(ii)	oxygen		1	AO1 1.4.3b
2(b)(iii)	about 80 %		1	AO1 1.7.2a

2(c)(i)	0.03(0) (%)		1	AO2 1.7.2 c
2(c)(ii)	increased slowly then rapidly	allow figures from graph to indicate increase	1 1	AO2 1.7.2i
2(c)(iii)	any <b>two</b> from: • use of fossil fuels • deforestation • cars/transport • industry/factories	ignore more people allow less trees / plants	2	AO3 1.7.2i
<b>Total</b>			<b>12</b>	