

AQA, OCR, Edexcel

GCSE Science

GCSE Chemistry

Earth's Atmosphere

Answers

M M E

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Total Marks: /21

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The proportions of different gases in the atmosphere

Q1: For 200 million years, the proportions of different gases in the atmosphere have been much the same as they are today. Using this box, if the whole box is the atmosphere, represent the proportion of gases and what they are by splitting the box up into different sizes.

Four-fifths (approximately 80%) nitrogen (1 mark)	One-fifth (20 %) oxygen (1 mark)	
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Small proportions of various other gases, including CO₂, water vapour and noble gases such as Argon (1 mark)

(3 marks)

Q2: Describe the theory for the development of the Earth's atmosphere in the first billion years of the Earth's existence.

A= Intense volcanic activity released gases (1 mark) that formed the early atmosphere and water vapour (1 mark) that condensed to form the oceans (1 mark).

(3 marks)

Q3: During the first billion years which planets would the atmosphere have been similar to?

A= Mars (1 mark) and venus (1 mark).

(2 marks)

Q4: Volcanoes also produced nitrogen which gradually built up in the atmosphere. This may have produced which other gases?

A= Methane (1 mark) and ammonia (1 mark).

(2 marks)

Q5: How did the oceans reduce the amount of carbon dioxide in the atmosphere?

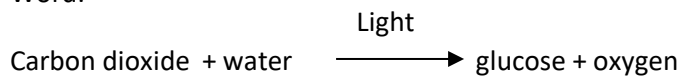
A= Carbon dioxide dissolved in the water (1 mark) and carbonates were precipitated producing sediments (1 mark) reducing the amount of carbon dioxide in the atmosphere (1 mark).

(3 marks)

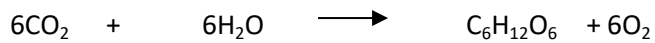
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Q6: Algae and plants produced the oxygen that is now in the atmosphere. Represent this in an equation. Both word and symbol

Word:



Symbol



(4 marks)

Q7: Explain how the differing levels of oxygen enabled animals to evolve.

A=Algae first produced oxygen, then plants evolved (1 mark) and the percentage of oxygen increased to a level that allowed animals to evolve (1 mark)

(2 marks)

Q8: How did carbon dioxide in the atmosphere decrease from the early atmosphere to now?

A= Algae and plants decreased the percentage of carbon dioxide in the atmosphere by photosynthesis (1 mark). The formation of sedimentary rocks and fossil fuels that contain carbon (1 mark)

(2 marks)