The atmosphere and pollution

Edexcel GCSE Chemistry (1CH0) · Foundation and Higher

Answer on your own paper. Show your working where needed.

1. Read the present atmosphere

Name the two most abundant gases in dry air and give their approximate percentages.

2. An early atmosphere model

A model of early Earth links the first oceans with a fall in atmospheric carbon dioxide. Explain how the oceans formed and how they could remove some carbon dioxide from the air.

3. Later changes to atmospheric gases

Much later in an early Earth model, primitive organisms spread through the oceans. The amount of atmospheric oxygen began to rise as carbon dioxide fell. Name a biological process that explains both changes and explain the link.

4. The greenhouse effect

Explain how an increase in methane can result in a warmer surface, even when the amount of sunlight arriving at Earth stays the same.

5. Pollutants with different sources

Give one source of sulfur dioxide when fuels burn. Explain why petrol or diesel engines may also emit nitrogen oxides.

6. A carbon monoxide hazard

An appliance burns a hydrocarbon with a limited supply of oxygen. Name one poisonous gas that can form and explain its effect on oxygen transport in the body.

7. Interpreting a short record

In one region, the CO_2 reading rises from 370 to 406 parts per million over a study period. The average temperature there also rises. Calculate the CO_2 increase. State what evidence would make the conclusion that warming is worldwide stronger.

8. Two types of pollution control

An engine emits sulfur dioxide and nitrogen oxides. An operator changes to a fuel with much less sulfur. The engine gets just as hot.

Predict one emission that should fall. Explain why the other can still form and give one effect of sulfur dioxide on the environment.

9. Extra challenge · Evaluate two temperature records

A 40-year record shows regional temperatures rising as fossil-fuel use and atmospheric carbon dioxide also rise. Most thermometers are in towns that expanded during those years. A nearby rural record covers only the last eight years and shows little change.

Explain what supports the proposed link, what weakens this comparison and what extra measurements would make the case stronger.

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