 <p>Y 3 G C I Bassaleg SCHOOL</p>	<p align="center">Chemistry 1 Topic 7 Assessed homework</p> <p align="center"><u>The Ever-Changing Earth</u> <u>Y Ddaear sy'n newid yn barhaus</u></p>	<p>Name.....</p> <p>Teacher.....</p> <p>Mark / 33</p>
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1) Read the following information to help you answer the questions below.

In 1915, a scientist called Alfred Wegener suggested that the Earth's continents were once joined together. He suggested that the continents moved apart in a process called 'continental drift'. He gave two pieces of evidence to support his idea.

1. The coastlines of different continents fit together like a jigsaw.
2. Fossils found on different continents were very similar despite the continents being separated by large oceans.

Other scientists did not believe Wegener. They believed that the continents and other features formed as the Earth cooled. It was not until after Wegener died that his ideas were accepted. It is now known that the Earth's crust (lithosphere) is made up of a number of pieces called tectonic plates. These plates are moving very slowly and it is this movement that is believed to be responsible for continental drift.

a) Name the process by which the continents are believed to have moved apart. [1]f

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b) Describe how the coastlines of continents provide evidence for this process. [1]f

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.....

c) State how fossils provide evidence for this process.

.....[1]f

d) State why other scientists did not believe Wegener.....

..... [1]f

2) Use only the words below to answer this question

earthquakes

hurricanes

quickly

plates

slabs

slowly

thunderstorms

volcanoes

(i) The Earth's crust (lithosphere) is made up of very large pieces called [1]f

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(ii) These pieces are moving very [1]f

(iii) Give **two** geological events or features that may be observed near the boundaries of these very large pieces. [2]f

..... and

3) Read the information and then answer the questions that follow.

Scientists believe that the Earth's early atmosphere was formed from the gases given out by volcanoes. It consisted mainly of carbon dioxide and water vapour with some ammonia and methane. As the Earth cooled, the water vapour condensed to form the oceans. Over time, carbon dioxide dissolved in the oceans and this led to the formation of carbonate rocks. Plants evolved and produced oxygen by photosynthesis. Ammonia reacted with oxygen to produce nitrogen. Methane reacted with oxygen to produce carbon dioxide and water.

a) State the source of the early atmosphere. [1]f

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b) Name the **two main** gases present in the early atmosphere. [2]f

..... and

c) Name the gas that was produced from ammonia. [1]f

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d) Name the **process** that produced oxygen. [1]f

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e) Write a **word** equation to show what happened to the methane present in the early atmosphere. [2]f

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4) Read the information and then answer the questions that follow.

Some fuels, such as coal, contain small amounts of sulphur as an impurity. When these fuels burn, sulphur dioxide gas is formed from this impurity. Sulphur dioxide is an acidic gas which reacts with rain water to form acid rain. Acid rain is harmful to the environment, since it kills fish in lakes and damages trees and buildings. Methods often used to reduce the problem caused by acid rain include:

- building tall chimneys to reduce low level pollution;
- neutralising acidic gases by reacting with limestone;
- adding limestone to lakes to neutralise the acidic solution.

a) Name the gas that is responsible for acid rain. [1]f

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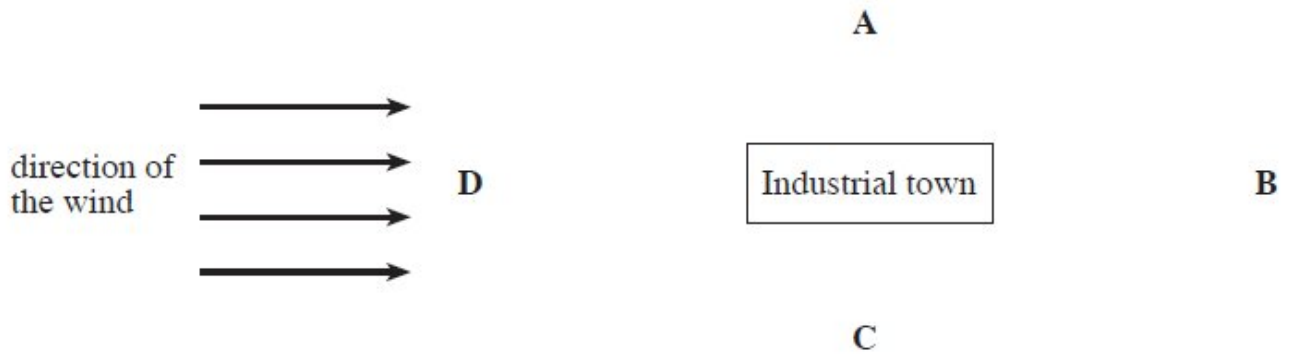
b) State **one** environmental problem caused by acid rain. [1]f

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c) Give the method used to reduce the amount of sulphur dioxide being released into the atmosphere by industry. [1]f

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d) The following diagram shows a map of a town which has a coal-burning industry and the direction of the wind.

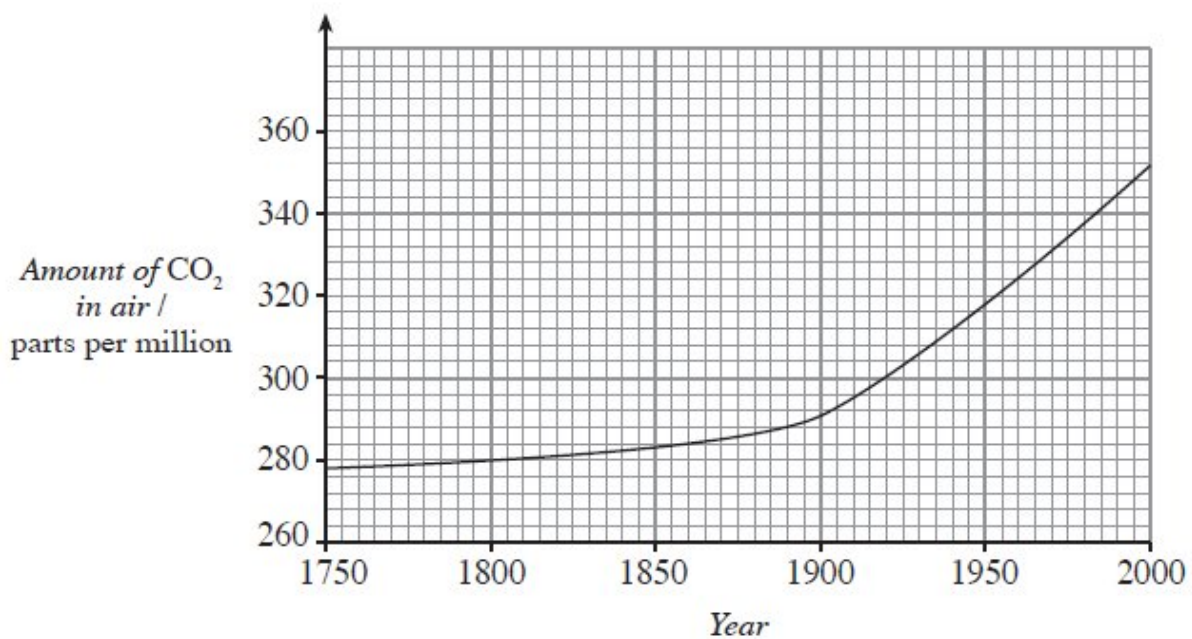


State the area outside the town, **A**, **B**, **C** or **D**, in which you would expect to find most sulphur dioxide from the coal-burning plant and explain your answer. [2]f

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5) The following graph shows how levels of carbon dioxide in the air have changed between 1750 and the year 2000.



a) Compare the pattern of change shown in the graph before and after 1900. [2]f/h

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b) Give **two** possible reasons for the change seen after 1900. [2]f/h

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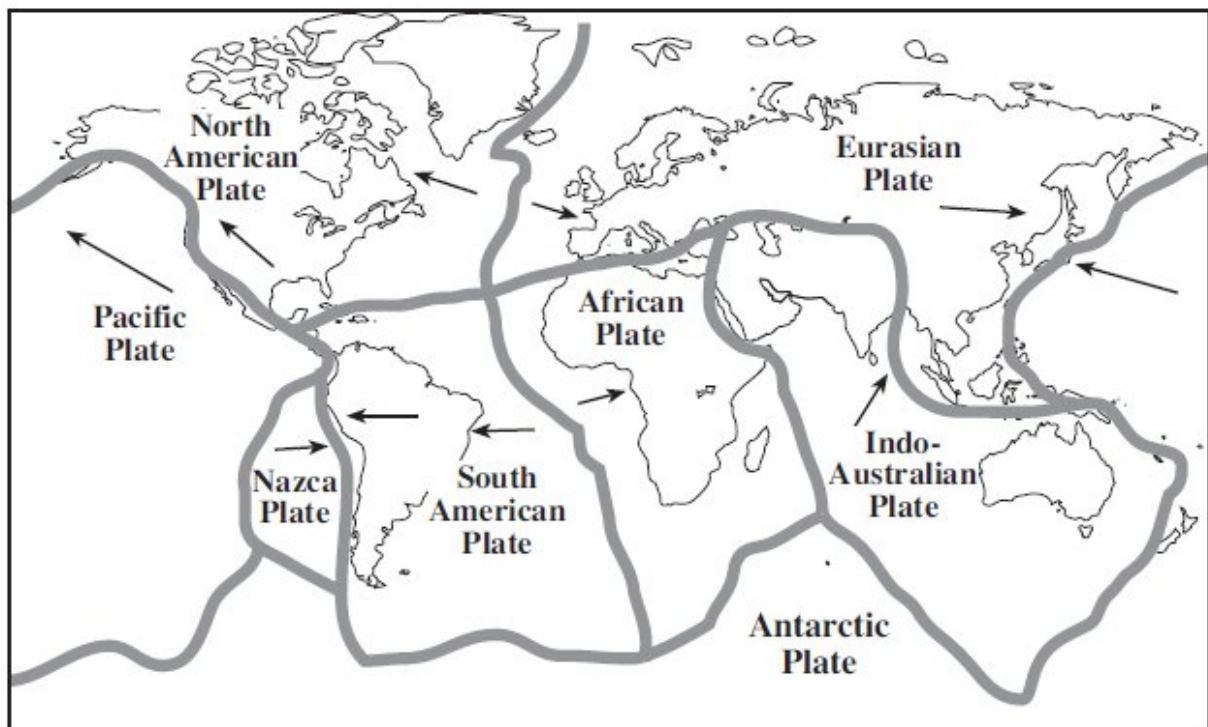
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c) i) Describe what effect these changes in levels of carbon dioxide are believed to be having on the temperature of the Earth's atmosphere. [1]f/h

ii) What is the name given to this effect? [1]f/h

iii) Give **one** possible result of this change in the temperature of the Earth's atmosphere. [1]f/h

6) The following is a simplified diagram showing the Earth's tectonic plate boundaries



a) Explain how the movement of the South American and African plates leads to the formation of new igneous rock. [3]h

b) Place **X** on the diagram to show where the movement of **two** plates could result in the denser plate being driven downward. [1]h

c) Alfred Wegener proposed the idea of continental drift in 1915. However, other scientists did not accept his idea until the 1960's.

i) Give **one** piece of evidence that Wegener used to support his idea. [1]h

ii) Give the main reason why his ideas were not immediately accepted. [1]h