

S2 Unit 3 Environmental Chemistry Homework

Homework 1

Question 1 and 2 - Multiple Choice

There is only one correct answer for each question

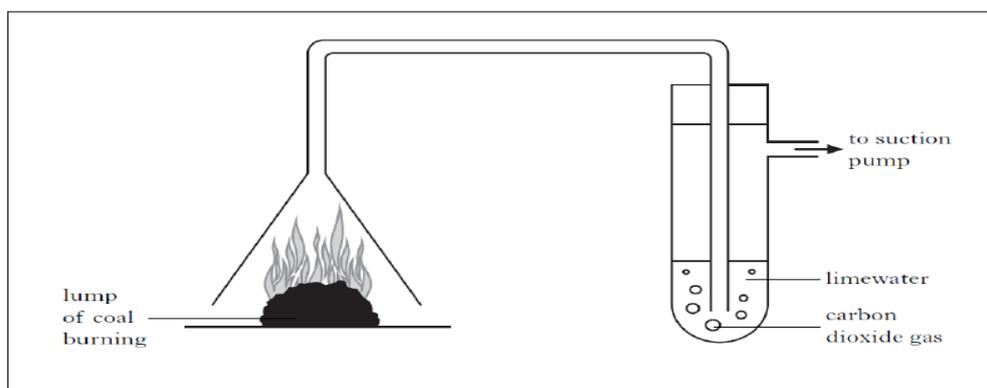
1. Which of the following are both fossil fuels

- A Coal and Cooking Oil
- B Natural Gas and Hydrogen
- C Crude Oil and Natural Gas
- D Ethanol (Alcohol) and Coal

2. Which of the following is a renewable fuel?

- A Coal
- B Petrol
- C Diesel
- D Solar

3. When coal is burned, carbon dioxide gas is produced.



What would you see happening when carbon dioxide gas is bubbled through the limewater?

4. Write a definition for the following words

- a) **combustion**
- b) **fuel**

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Homework 2

1. Describe in detail how coal was formed
2. Coal is one example of a fossil fuel. Name two other fossil fuels
3. Multiple choice - choose **one** correct answer

Which statement about carbon dioxide in air is thought to be false?

The increase in the level of carbon dioxide in the air may

- A cause global warming
- B cause the atmosphere to cool down
- C be due to the increased burning of fossil fuels
- D be due to the extensive clearing of forests

4. Multiple choice - choose **one** correct answer

From the list below what can biodiesel **not** be made from?

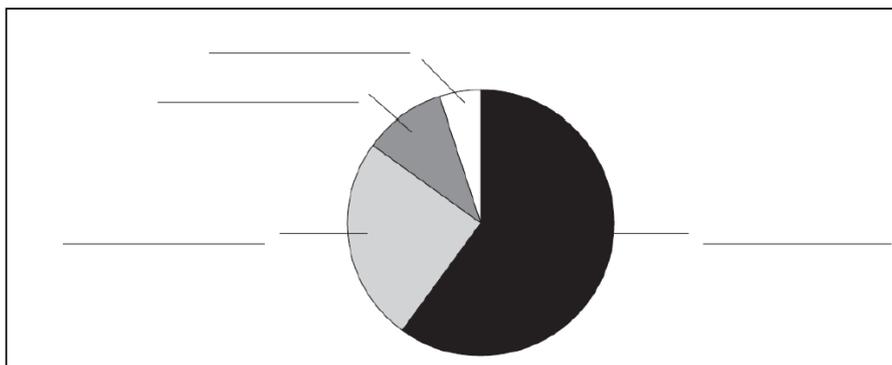
- A Animal fat
- B Vegetable oil
- C Grease
- D Petrol

5. Biogas is a mixture of gases produced by the breakdown of agricultural waste, manure, plant material, sewage, green waste or food waste.

Gases in biogas mixture	Percentage (%)
methane	60
carbon dioxide	25
nitrogen	10
other gases	5

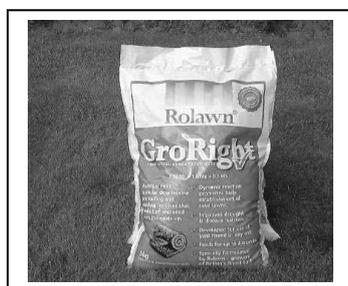
Use the information in the table to label the pie chart on the next page

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Homework 3

1. Fertilisers are added to soil.



Literacy task - Read the paragraph and answer the questions below

Nitrogen (N), phosphorus (P) and potassium (K) are three elements that are essential for healthy plant growth. These elements are taken in from the soil through the roots of plants; the elements are taken in as compounds that are in solution.

Fertilisers are added to the soil to restore the essential elements.

Natural fertilisers are produced by the natural breakdown of plant and animal remains.

Artificial fertilisers are made by the chemical industry.

Increased demand for food has resulted in the use of artificial fertilisers.

The major artificial fertilisers are ammonium, nitrate, phosphate and potassium compounds.

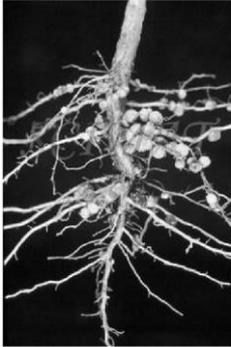
- Give the names of the **three** elements that are essential for healthy plant growth.
- In what way are these elements taken in by plants?
- Why are fertilisers known as NPK compounds?
- What is meant by a natural fertiliser?
- Give the names of at least **two** natural fertilisers.
- What is meant by an artificial fertiliser?

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g) Why do we need artificial fertilisers

h) Give the names of the **four** types of compound found in natural fertilisers.

2. Some plants have root nodules in which nitrogen from the air is converted into nitrates.



The nitrates can be used for plant growth.

a) Give **one** example of a plant that can convert nitrogen from the air into nitrates.

b) Describe the roots of these plants.

c) Why is it an advantage for plants to be able to use nitrogen directly from the air?