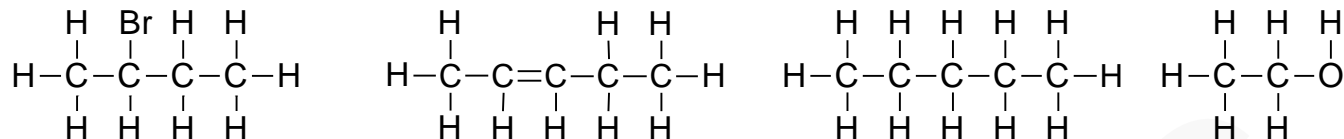


1 Crude oil is a mixture of hydrocarbons.

(a) What is a hydrocarbon? [2]

.....

(b) Circle the molecules that are **not** hydrocarbons in the following list? [2]



(b) Explain how crude oil is separated into fractions in industry [4]

.....

.....

.....

.....

(c) Two of the fractions are gasoline and bitumen. Give **one** use of each. [2]

gasoline ..... bitumen .....

(d) Name **two** fractions formed in the fractional distillation of crude oil, other than gasoline and bitumen. [2]

1 ..... 2 .....

(e) Re-write the following so that it is correct: [2]

*The diesel fraction from crude oil is darker in colour and less viscous than the kerosene fraction.*

.....

.....

(f) The fractions from crude oil are mainly used as fuels. Explain what is meant by a *fuel*. [2]

.....

.....

2 (a) Identify the **two** products of **complete** combustion of hydrocarbons. [2]

1 ..... 2 .....

(b) Explain why the **incomplete** combustion of hydrocarbons is harmful to humans. [3]

.....

.....

.....

3 Write a balanced chemical equation for the complete combustion of butane. [3]

.....

4 Write a balanced chemical equation for the incomplete combustion of butane producing soot.[3]

.....

5 (a) Give the **name** of one greenhouse gas and one that can lead to the formation of acid rain. [2]

Greenhouse gas .....

Acid Rain .....

(b) Write a balanced chemical equation for the formation of the gas that can lead to acid rain. [2]

.....

(c) Explain how the gas that is responsible for acid rain that you have chosen in (a) is formed. [2]

.....

.....

.....

(d) Describe one adverse environmental effect associated with the greenhouse gas you have named in (a). [2]

.....

.....

.....

6 The structures of some organic molecules are shown below. Draw a dot and cross diagram for each one. [4]

