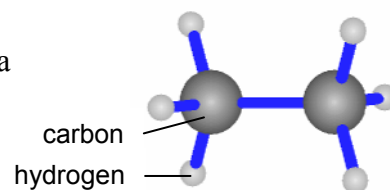


1. A compound is a substance made from two or more different elements, chemically joined together. The picture on the right shows a model of a molecule of ethane, one of the gases found in natural gas and crude oil.



- a) Is ethane a compound? .....

Give a reason for your answer: .....

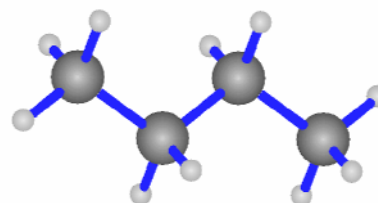
.....

- b) Ethane is one substance in a family of substances called the **hydrocarbons**.

What elements are hydrocarbons made from? ..... and .....

2. The chemical formula for ethane is  $C_2H_6$ .

- a) What is the chemical formula for butane (shown on the right)?

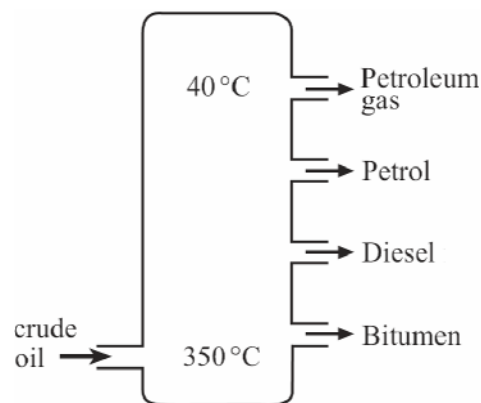
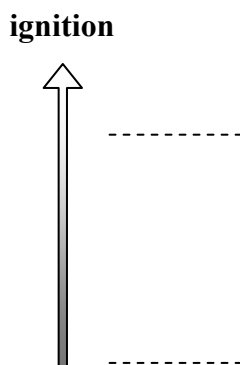
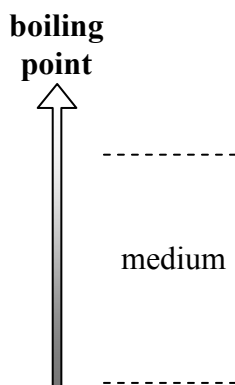
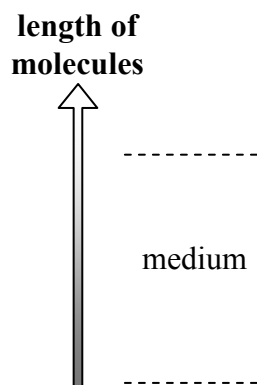


Answer: .....

- b) Octane has eight carbon atoms and eighteen hydrogen atoms.

What is the chemical formula for octane? .....

3. Use the information given below to complete this diagram of the oil fractionating column.



- a) Hydrocarbons that are gases at room temperature contain short molecules. Hydrocarbons that are solids at room temperature contain long molecules. Label the **length of molecules** arrow to show where the short molecules are found, and where the long molecules are found.
- b) Hydrocarbons with short molecules have low boiling points. Hydrocarbons with long molecules have high boiling points. Label the **boiling point** arrow to show where the hydrocarbons with low boiling points are found, and where the hydrocarbons with high boiling points are found.
- c) Hydrocarbons with short molecules are easier to ignite (set on fire) than hydrocarbons with long molecules. Label the **ignition** arrow to show where the hydrocarbons that are easy to ignite are found, and where the hydrocarbons that are difficult to ignite are found.