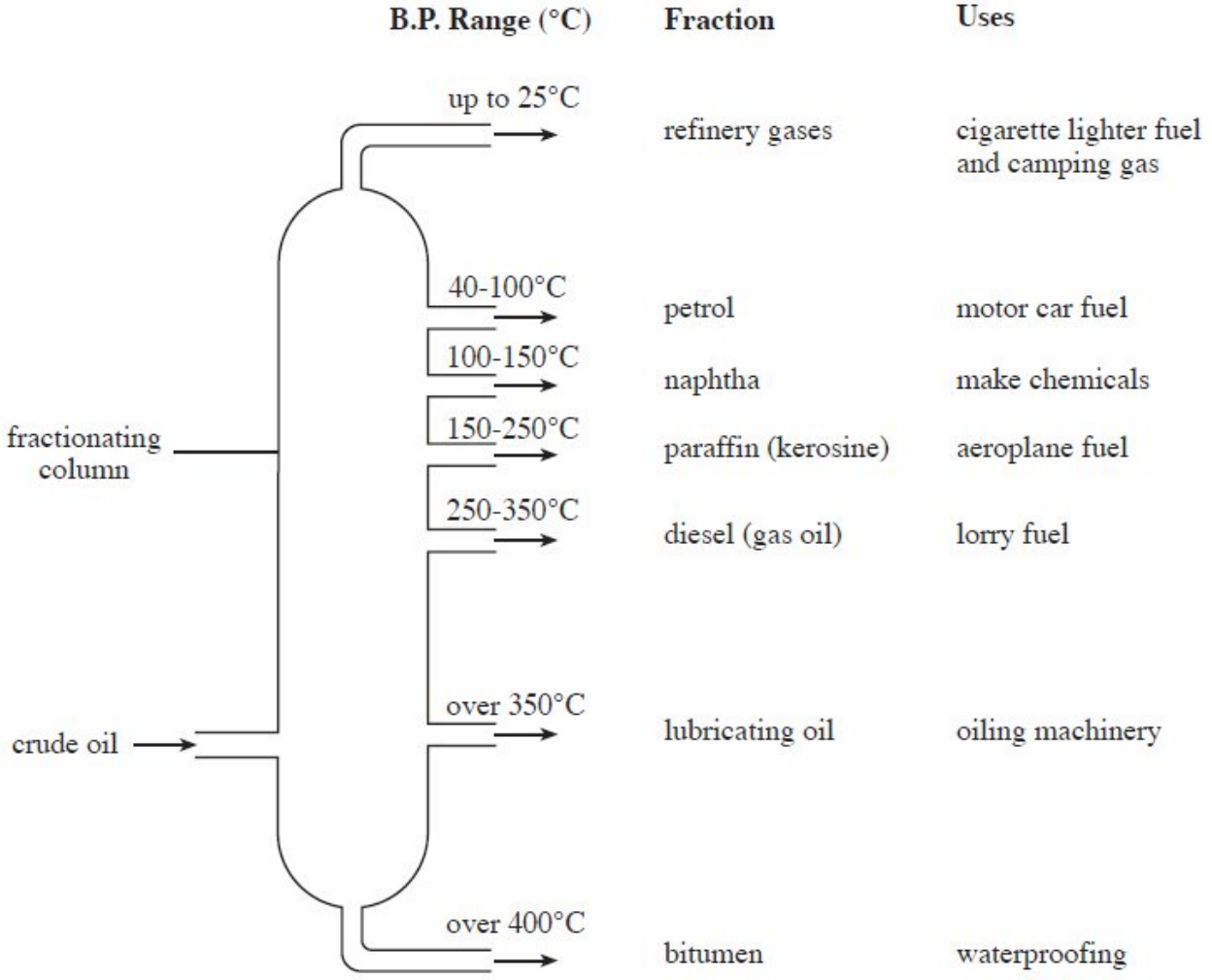
Ysgol Bassaleg School	**Chemistry 1 Topic 6 Assessed homework** **The Production & Uses of Fuels & Plastics** ***Cynhyrchu a defnyddio tanwyddau a phlastigion***	**Name……** **Teacher……** **Mark / 31 ……**

1) Crude oil is a mixture of compounds called hydrocarbons which are separated into fractions in a fractionating column.



a) Name two fractions that are used as fuel [2]f

……..

b) Name two fractions that are not used as fuel [2]f

……..

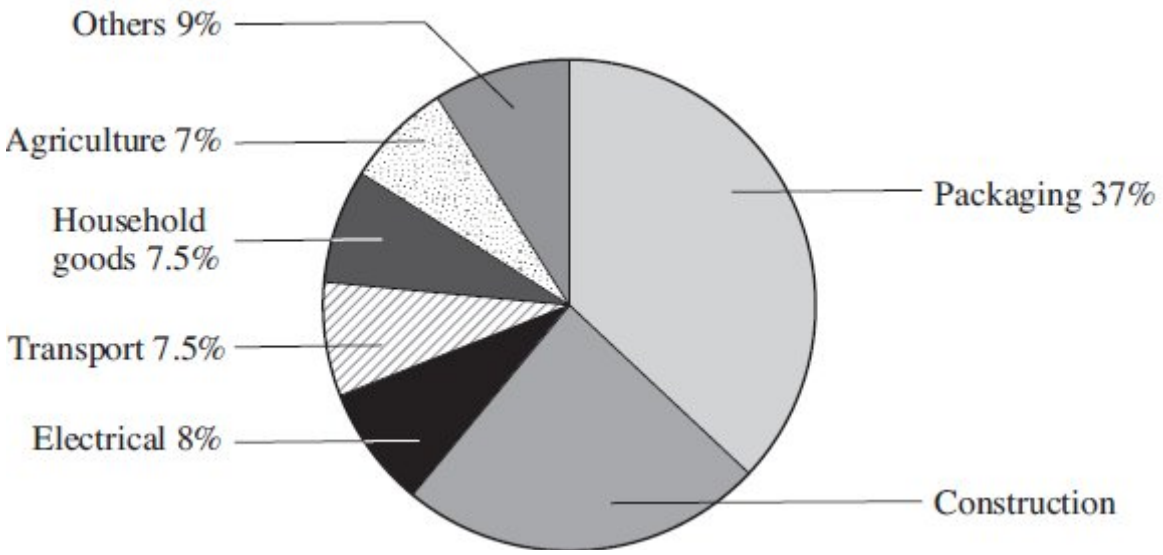
c) Name the fraction with the boiling point range 100 – 150 ^{o}C [1]f

……..

d) Name the two elements found in a hydrocarbon [2]f

……..

2) The following chart shows how plastics are used in the UK.



a) Give the main use of plastics in the UK [1]f

……..

b) Name the industry that uses 7% of plastics in the UK. [1]f

……..

c) From the chart above, calculate the percentage of plastics used in construction. [2]f

……..

……..

3) Polyvinylchloride (PVC) is an example of a polymer. The following list gives some properties of PVC.

- strong
- resistant to weathering
- does not conduct electricity
- light
- non toxic
- good thermal insulator

Use **only** the properties in the above list to answer the following questions. Give the **main** reason for using PVC in

i) window frames …….. [1]f

ii) cable-coverings for electric blankets ……..[1]f

iii) blood storage bags …….. [1]f

4) Below are the names of some common plastics

polythene **polystyrene** **PTFE (Teflon)** **PVC**

Choose from the list above a plastic used to:

(i) coat frying pans [1]f

……..

(ii) produce carrier bags [1]f

……..

5) Use only the words in the following box to complete the sentences about the plastic, poly(ethene), which is commonly called polythene. **Each word may be used once, more than once or not at all.**

cracking	**ethane**	**ethene**	**monomer**	**polymer**	**polymerisation**

a) The small reactive molecule used to produce polythene is …… [1]f

b) A small reactive molecule such as this is known as a .....[1]f

c) The process taking place during the production of polythene is known as

…….. [1]f

d) Polythene is an example of a …… [1]f

e*)* PVC and PTFE (teflon) are two other examples of plastics. Give **one** use of **each**. [2]f

Use of PVC ……

Use of PTFE ……..

6) Plastics have replaced glass in making most bottles. The table below shows some options for disposing of waste plastic bottles

Option	***Method of Disposal***
A	Burn them with other household waste
B	Fill in landfill sites along with other household waste
C	Re-use the bottles
D	Recycle into plastic which can be remoulded

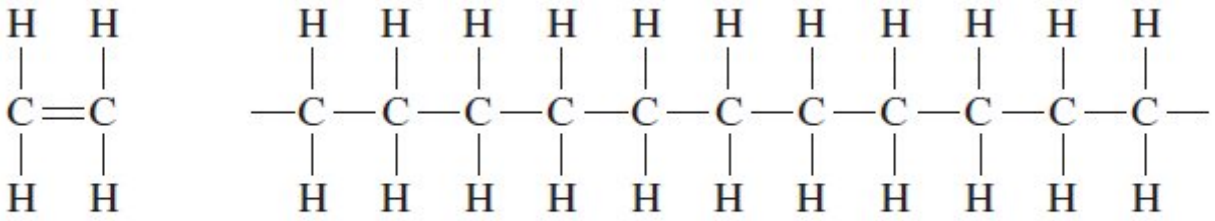
Give the **letter** of the option which would result in

a) the conservation of oil reserves…….. [1]f

b) the spoiling of the appearance of the landscape…… [1]f

c) an increase in air pollution…….. [1]f

7) The following diagram shows the structure of an ethene molecule and part of a polyethene molecule. Give **two** differences between a molecule of ethene and a molecule of polyethene. [2]f/h



ethene

part of a polyethene molecule

Difference 1 ……

……

Difference 2……

……

8) a) One method of producing ethene is by the cracking of large saturated hydrocarbons. Give **two** conditions needed for cracking. [2]h

……

……

b) Apart from the possible danger to wildlife, give **one** reason why people are concerned about the use of plastics such as polythene. [1]h

……

……

9) Cracking is the process that oil companies carry out on large hydrocarbons to form smaller, more useful hydrocarbon molecules. Ethene is one of the products of the cracking of decane, $C_{10}H_{22}$. Complete the **symbol** equation below for the cracking of decane. [1]h

$C_{10}H_{22} \rightarrow C_2H_4 +$ ……