Oxford Cambridge and RSA

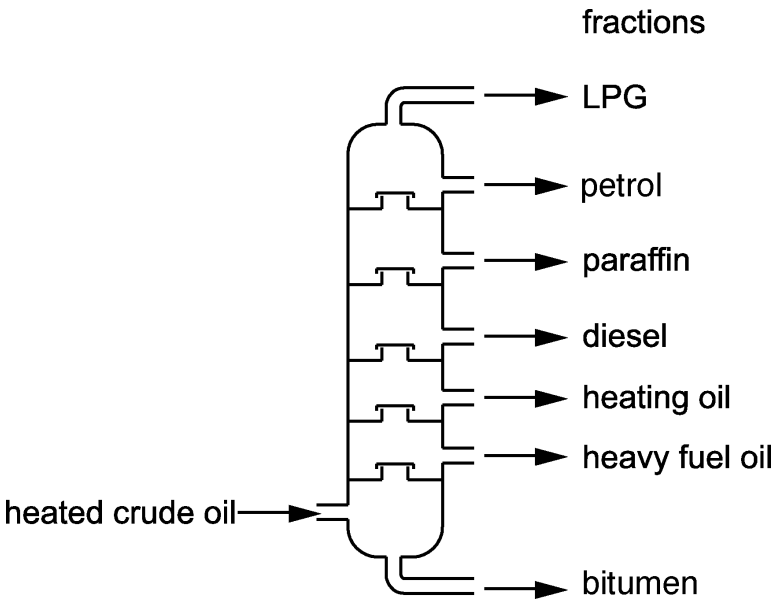
GCSE Chemistry A (Gateway Science)

J248/02 C4-C6 and C7 Foundation (Foundation Tier)

Question Set 4

1 Crude oil is used as a source of fuels. It is separated into many fractions by fractional distillation.

The diagram shows a fractionating column.



(a) Crude oil contains a mixture of hydrocarbons that boil at different temperatures.

Describe **how** crude oil can be separated using a fractionating column.

- Tall column has condensers coming off at different heights
- Column heated at the bottom so the bottom is the hottest and the top is the coolest.
- Because substances in crude oil have different boiling points, substances with high boiling points condense at the bottom and substances with low boiling points condense at the top

[4]

(b) The alkane, $C_{15}H_{32}$, is cracked to make an alkene, C_6H_{12} and an alkane, C_3H_8.

Construct the **balanced symbol** equation for this reaction.

$C_{15}H_{32} \longrightarrow 2\,C_6H_{12} + C_3H_8$

[1]

(c) Alkenes are used to make polymers. Polymers are used to make clothes such as socks and jumpers.

Suggest **one** property of a polymer that makes it suitable for making clothes.

Can be made in any length or any thickness **[1]**

Total Marks for Question Set 4: 6