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Crude oil is a mixture of hydrocarbons which can be separated into fractions.

1

What is a mixture?

[2 marks]

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2

What is a hydrocarbon?

[2 marks]

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The table below gives some information on the hydrocarbon fractions found in crude oil.

Fraction	Boiling point °C	Relative % in crude oil	Carbon chain length	Demand
Naptha	125	10	5 to 10	high
Kerosene	160	15	10 to 15	high
Diesel	250	20	15 to 20	medium
Fuel oil	300	45	30 to 70	low

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1

Naptha has a lower boiling point than diesel.

Explain why.

[2 marks]

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2

Kerosene is more expensive than fuel oil.

Suggest reasons why.

[2 marks]

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Crude oil is a mixture of mainly alkanes. Alkanes are a group of chemicals which contain carbon and hydrogen atoms, the smallest of which is methane.

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1

Describe how a mixture of alkanes can be separated using fractional distillation. **[3 marks]**

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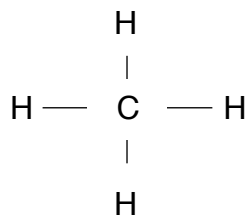
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2

The alkane methane has the following displayed formula.



Draw the displayed formula of propane in the box above.

[2 marks]

(Total 13 marks)

End