

1.

A $\begin{array}{cc} \text{CN} & \text{H} \\ & \\ \text{C} & = & \text{C} \\ & \\ \text{H} & \text{H} \end{array}$	B $\begin{array}{cc} \text{Cl} & \text{H} \\ & \\ \text{C} & = & \text{C} \\ & \\ \text{H} & \text{Cl} \end{array}$	C $\begin{array}{cc} \text{CH}_3 & \text{H} \\ & \\ \text{C} & = & \text{C} \\ & \\ \text{H} & \text{CH}_3 \end{array}$
D $\begin{array}{cc} \text{Cl} & \text{H} \\ & \\ \text{C} & = & \text{C} \\ & \\ \text{Cl} & \text{H} \end{array}$	E $\begin{array}{cc} \text{H} & \text{H} \\ & \\ \text{C} & = & \text{C} \\ & \\ \text{H} & \text{H} \end{array}$	F $\begin{array}{cc} \text{CH}_3 & \text{H} \\ & \\ \text{C} & = & \text{C} \\ & \\ \text{H} & \text{H} \end{array}$

Identify the **two** isomers.**2 MARKS**

A	B	C
D	E	F

B and D

2.

The table gives information about some alkanes.

Name	Density g/cm ³
pentane	0.626
hexane	0.659
heptane	0.684
octane	0.703

Predict the density of the alkane with **nine** carbon atoms.

0.722

g/cm³ **1**

3.

A student investigated the reaction of some fuels with oxygen.

The results are shown.

Fuel	Products
A	carbon dioxide
B	water
C	nitrogen, water
D	carbon dioxide, water

Name the **elements** which **must** be present in fuel **D**.

_____ **Hydrogen and carbon**

4. The grid shows the structural formulae of some hydrocarbons.

A $\begin{array}{c} \text{H} & \text{H} & \text{H} \\ & & \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{H} \\ & & \\ \text{H} & \text{H} & \text{H} \end{array}$	B $\begin{array}{c} \text{H} & \text{H} & \text{H} & \text{H} \\ & & & \\ \text{H}-\text{C}-\text{C}-\text{C}-\text{C}-\text{H} \\ & & & \\ \text{H} & \text{H} & \text{H} & \text{H} \end{array}$	C $\begin{array}{c} & \text{H} & & \text{H} & \\ & / & & \backslash & \\ & \text{C} & & & \\ & \backslash & & / & \\ \text{H}-\text{C} & - & \text{C}-\text{H} \\ & & \\ \text{H} & & \text{H} \end{array}$
D $\begin{array}{c} & \text{H} & & & \text{H} & \\ & / & & & \backslash & \\ & \text{C}=\text{C} & - & \text{C}-\text{H} \\ & \backslash & & & & \\ \text{H} & & \text{H} & & \text{H} \end{array}$	E $\begin{array}{c} & \text{H} & & \text{H} & \\ & / & & \backslash & \\ & \text{C} & & & \\ & \backslash & & / & \\ \text{H}-\text{C} & & \text{C}-\text{H} \\ & & \\ \text{H}-\text{C} & - & \text{C}-\text{H} \\ & & \\ \text{H} & & \text{H} \end{array}$	F $\begin{array}{c} & \text{H} & & \text{H} & \text{H} & \\ & / & & \backslash & \backslash & \\ & \text{C}=\text{C} & - & \text{C}-\text{C}-\text{H} \\ & \backslash & & & & \\ \text{H} & & \text{H} & & \text{H} \end{array}$

(a) Identify the hydrocarbon which reacts with hydrogen to form butane.

A	B	C
D	E	F

F

1

(b) Identify the **two** isomers.

A	B	C
D	E	F

C and D

1

(c) Identify the structural formula which represents propene.

A	B	C
D	E	F

D

1

5. The structures of some hydrocarbons are shown in the grid.

A <pre> H H H \ / C=C-C-H / H H </pre>	B <pre> H H \ / C / \ H-C C-H H H </pre>	C <pre> H H H H-C-C-C-H H H H </pre>
D <pre> H H H H H-C-C-C-C-H H H H H </pre>	E <pre> H H H H / \ H-C-C-C=C / \ H H H H H </pre>	F <pre> H H H-C-C-H H-C-C-H H H </pre>

(a) Identify the **two** hydrocarbons with the general formula C_nH_{2n} , which do **not** react quickly with bromine solution.

A	B	C
D	E	F

B and F

1

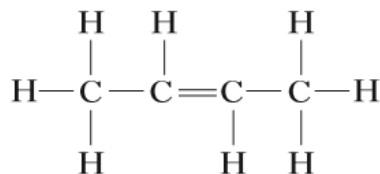
(b) Identify the hydrocarbon which is the first member of a homologous series.

A	B	C
D	E	F

B

1

(c) Identify the **two** isomers of



A	B	C
D	E	F

E and F

1