

- 1 Complete the following paragraph about cracking: [3]

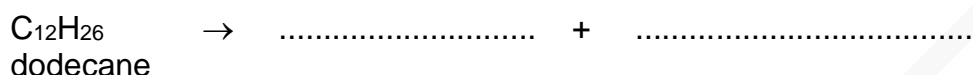
Crude oil has too high a proportion of

These are not as useful as

and therefore cannot be sold for as much money by oil companies.

Therefore the are cracked

- 2 Dodecane can be cracked to produce just two products, ethene and decane. Complete the chemical equation for this process [2]



- 3 State the industrial conditions for cracking: [2]

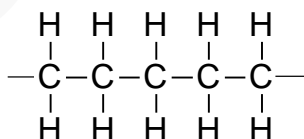
1

2

- 4 The structures of 4 organic molecules are shown in the table

$\begin{array}{ccccccc} & H & & H & H & & \\ & & & & & & \\ H & - C & - C & = C & - C & - C & - H \\ & & & & & & \\ & H & H & H & H & H & \end{array}$ <p>A</p>	$\begin{array}{ccccccc} & H & H & H & & & \\ & & & & & & \\ H & - C & = C & - C & - H & & \\ & & & & & & \\ & & & H & & & \end{array}$ <p>B</p>
$\begin{array}{ccc} H & & H \\ & \diagdown & / \\ & C = C & \\ & / & \diagdown \\ H & & H \end{array}$ <p>C</p>	$\begin{array}{ccccccc} & H & H & H & O & - H & \\ & & & & & & \\ H & - C & - C & - C & - C & - H & \\ & & & & & & \\ & H & H & H & H & & \end{array}$ <p>D</p>

- (a) Which of the molecules is not a hydrocarbon? [1]
- (b) Which of the molecules will not decolorise bromine water? [1]
- (c) Which of the molecules is propene? [1]
- (d) The repeat unit of the addition polymer formed by A is [1]

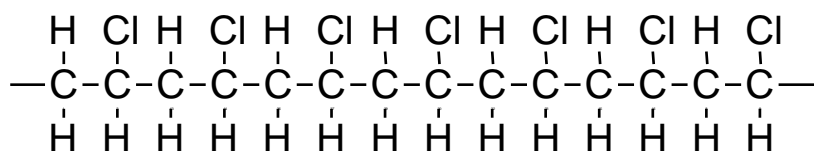


TRUE or FALSE

Circle an answer

- (e) Draw a section of the addition polymer formed by B. Include 3 repeat units. [2]

5 A section of an addition polymer is shown below:



(a) Draw the monomer of the polymer shown. [2]

(b) Re-write the following so that is correct [2]

The polymer shown is called poly(chloroethane). Addition polymers are formed when a large number of monomers join together to form a polymer chain. The polymer and the monomer both decolorise bromine water.

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6 Addition polymers are non-biodegradable.

(a) Explain what is meant by the term *biodegradable*. [2]

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(b) Explain why addition polymers are non-biodegradable [1]

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(c) Explain another environmental problem associated with the disposal of addition polymers. [2]

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7 Draw the repeat unit for the addition polymer formed by the molecule shown. [2]

