

O Level Combined Chemistry MCQs

Organic Chemistry - Alkanes Test 1.0

Q1

The general formula of the alkanes homologous series is C_nH_{2n+2} .

Which physical property decreases as n increases?

- A boiling point
- B flammability
- C melting point
- D viscosity

Q2

Which statement about alkanes is correct?

- A Ethane reacts with chlorine in an addition reaction.
- B Propane has a higher boiling point than butane.
- C The molecule of the alkane that contains 99 carbon atoms has 200 hydrogen atoms.
- D Ethane is the first member of the alkanes series.

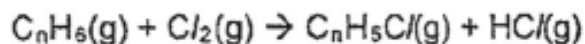
Q3

Which equation represents a cracking process?

- A $C_4H_8 + H_2 \rightarrow C_4H_{10}$
- B $C_8H_{18} \rightarrow 2C_3H_6 + C_2H_4 + H_2$
- C $C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$
- D $C_4H_9OH \rightarrow C_4H_8 + H_2O$

Q4

The reaction between a hydrocarbon, C_nH_6 , and chlorine can be represented by the equation:



Which statement about the reaction is correct?

- A It is an addition reaction.
- B Nickel is used as a catalyst in the reaction.
- C The molecular formula of the hydrocarbon is C_3H_6 .
- D UV light is required for the reaction to take place.

Q5

What are all the possible combustion products of methane?

- A carbon, carbon dioxide, carbon monoxide and water
- B carbon, carbon monoxide and hydrogen
- C carbon dioxide, carbon monoxide and hydrogen
- D carbon dioxide, carbon monoxide, hydrogen and water

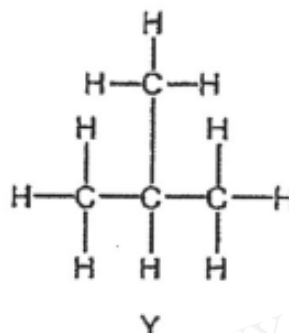
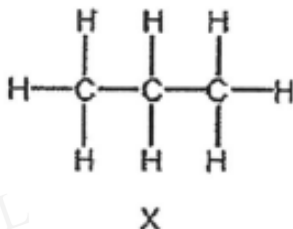
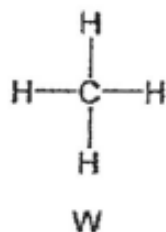
Q6

Which of the products, $C_{12}H_{24}$ and H_2 , could be formed by cracking dodecane, $C_{12}H_{26}$?

	$C_{12}H_{24}$	H_2
A	x	x
B	x	√
C	√	x
D	√	√

Q7

The structure of three hydrocarbons from the same homologous series are shown.



Which statement is correct?

- A W has the lowest boiling point.
- B X and Y have the same molecular formula.
- C All three molecules are unsaturated hydrocarbons.
- D All three molecules have different chemical properties.

Q8

Butane undergoes the first substitution reaction with chlorine in the presence of ultraviolet light. A student suggested that the following organic products are formed.

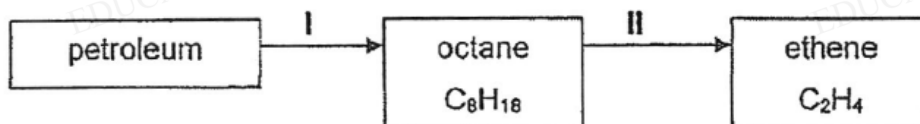
- 1 $\text{CH}_3\text{CHClCH}_2\text{CH}_3$
- 2 $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Cl}$
- 3 $\text{CH}_3\text{CHClCH}_2\text{CH}_3$
- 4 $\text{CCl}_3\text{CCl}_2\text{CCl}_2\text{CCl}_3$

Which of these four products are formed during the first substitution reaction?

- A 1 and 2
- B 2 and 3
- C 1, 2 and 3
- D 1, 2, 3 and 4

Q9

The diagram shows two stages in a reaction scheme.

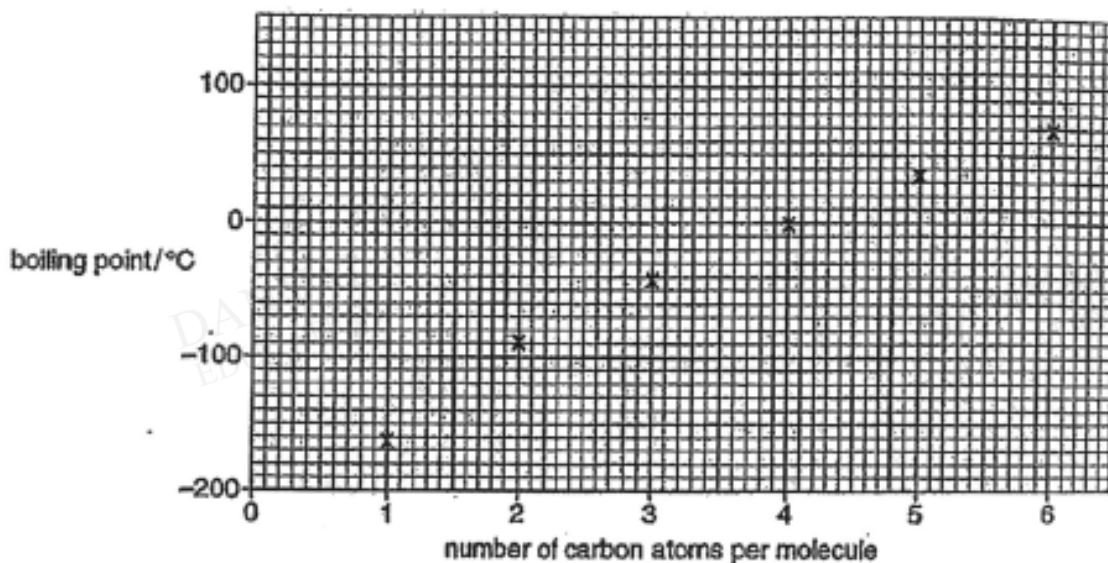


What is the name of stage II?

- A Substitution
- B Fractional Distillation
- C Hydrogenation
- D Cracking

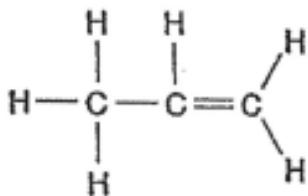
Q10

The graph shows how the boiling point of some hydrocarbon depends on the number of carbon atoms in their molecules.

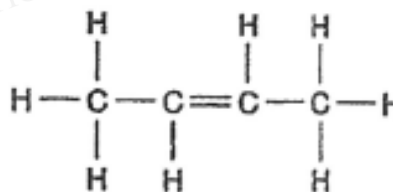


Which hydrocarbon is an alkane with a boiling point close to 0 °C?

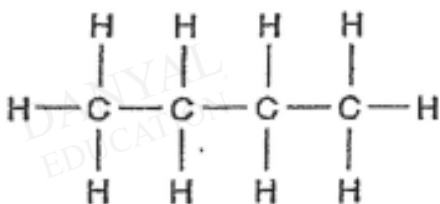
A



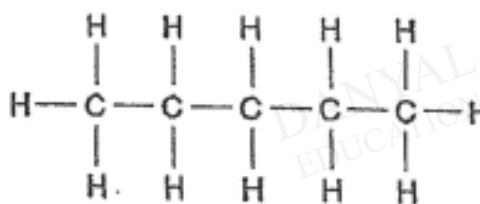
C



B



D



Answers

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Q1 B

Q2 C

Q3 B

Q4 D

Q5 A

Q6 D

Q7 A

Q8 B

Q9 D

Q10 B

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