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Crash Course Chemistry #43: Hydrocarbon Derivatives

Name: _____ Date: _____

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- Functional groups are specific groups of bonded atoms that _____ in predictable ways.
- In organic chemistry, the symbol "R" is used to represent the part of a molecule we are _____ with.
- A(n) _____ group is a terminal -OH group attached to a carbon chain.
- When an alcohol is dehydrogenated, it becomes a(n) _____.
- Hydrocarbons are generally nonpolar because the electronegativity difference between carbon and hydrogen is only _____.
- The difference in electronegativity between oxygen and hydrogen in an alcohol is _____ making the bond fairly polar.
- A carbon double-bonded to an oxygen is called a _____ group.
- When a carbonyl is bonded to a hydroxyl, the result is a(n) _____.
- Carboxylic acids can dissociate in solution because their hydrogen is _____ held.
- The simplest carboxylic acid, _____ acid, is found in fire ant venom.
- Acetone is an example of a _____, a functional group with a carbonyl in the middle of a carbon chain.
- A(n) _____ has a single oxygen atom connecting two carbon chains.
- A(n) _____ has two oxygens: one in the chain and one in a carbonyl group.
- An amine contains a terminal _____ group.
- Organic compounds with functional groups like esters, aldehydes, and amines behave _____ due to the atoms they contain.

Crash Course Chemistry #43: Hydrocarbon Derivatives KEY

- Functional groups are specific groups of bonded atoms that **function** in predictable ways.
- In organic chemistry, the symbol "R" is used to represent the part of a molecule we are **not concerned** with.
- A(n) **alcohol** group is a terminal -OH group attached to a carbon chain.
- When an alcohol is dehydrogenated, it becomes a(n) **aldehyde**.
- Hydrocarbons are generally nonpolar because the electronegativity difference between carbon and hydrogen is only **0.35**.
- The difference in electronegativity between oxygen and hydrogen in an alcohol is **1.22**, making the bond fairly polar.
- A carbon double-bonded to an oxygen is called a **carbonyl** group.
- When a carbonyl is bonded to a hydroxyl, the result is a(n) **carboxylic acid**.
- Carboxylic acids can dissociate in solution because their hydrogen is **weakly** held.
- The simplest carboxylic acid, **formic** acid, is found in fire ant venom.
- Acetone is an example of a **ketone**, a functional group with a carbonyl in the middle of a carbon chain.
- A(n) **ether** has a single oxygen atom connecting two carbon chains.
- A(n) **ester** has two oxygens: one in the chain and one in a carbonyl group.
- An amine contains a terminal **NH₂** group.
- Organic compounds with functional groups like esters, aldehydes, and amines behave **differently** due to the atoms they contain.

15 Questions

Answer Key Included

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