

Name: _____

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Chemistry 11
Organic Chemistry
Lesson #4 The 8 Functional Groups

The 8 FUNCTIONAL GROUPS INCLUDE:

1. alcohols	5. Carboxylic acids
2. aldehydes	6. amines
3. ketones	7. amides
4. ethers	8. esters

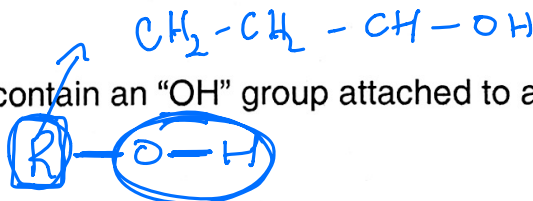
A functional group is a specific grouping of atoms which exists in a hydrocarbon and gives the molecule the ability to react in a specific manner or gives it special properties

Of the eight functional groups you are responsible for knowing how to name:

- #5 {
1. alcohols
 2. carboxylic acids
 3. esters

While for the remaining groups you must be able to recognize their formulas and structures.

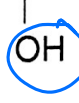
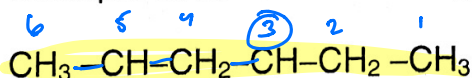
(ALC) ALCOHOLS- are organic compound that contain an "OH" group attached to a carbon in the carbon backbone:



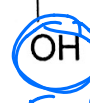
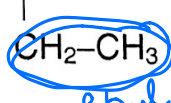
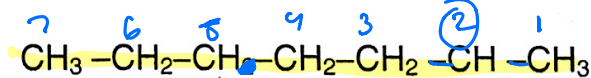
RULES for naming alcohols:

1. parent name is altered "e" becomes "ol"
2. LOWEST POSSIBLE ADDRESS is given to the attached -OH
3. carbon number is placed in front of parent name

Example 1: Name the following alcohols

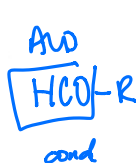
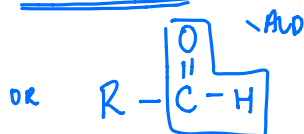
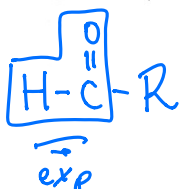


5-methyl-3-hexanol

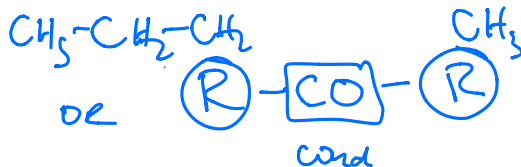


ethyl
5-ethyl-2-heptanol

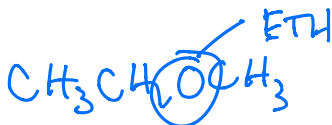
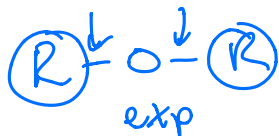
(ALD) ALDEHYDES:- organic compounds that contain a HC=O group at the end of the compound EXAMPLE:



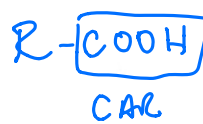
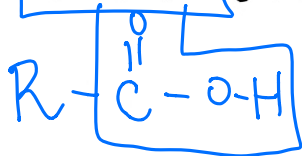
(KET) KETONES: - organic compounds that contain a $\text{C}=\text{O}$ group in the "middle" of the compound. Example:



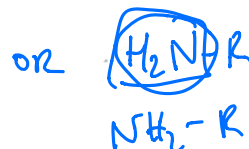
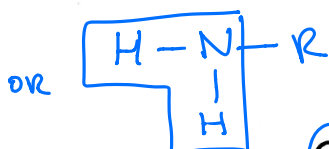
(ETH) ETHERS: - organic compounds that contain an "O" group in the backbone of the compound. Example:



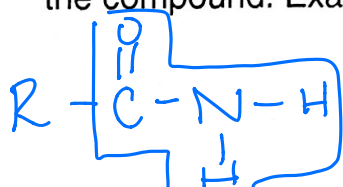
(CAR) ORGANIC ACIDS or CARBOXYLIC ACIDS: - organic compounds that contain a $\text{O}=\text{C}-\text{OH}$ group at the end of the compound Example.



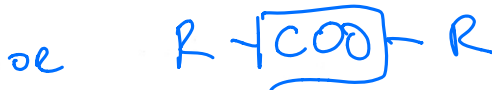
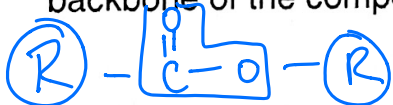
(AMN) AMINES: - organic compounds that contain a NH_2 group at the end of the compound. Example:



(AMID) AMIDES: - organic compounds that contain a $\text{O}=\text{C}-\text{NH}_2$ group at the end of the compound. Example:



(EST) ESTERS: - organic compounds that contain a $-\text{O}-\text{C}=\text{O}$ group in the backbone of the compound. Example:



HOMEWORK: Exercise #37