Homework:

- Watch paperclip video
- Read textbook page 25 to 27
- Finish remaining questions on Hydro Nomenclature and Functional Group nomenclature worksheet
- QUIZ ON MONDAY, Sept 28
- Molview .org

Why do we eat

- Nutrients

- Carbon - the central atom
- Atoms of 4 elements make up roughly 99% of mass of most cells
- H, N, C, O
- With certain exceptions, molecules with carbon are called organic compounds
- Most also contain hydrogen and oxygen

Molecular formula

- Indicates number of atoms in the molecule

Structural formula

- Indicates ratio of atoms with molecule

- ??

Prefixes:

- 1 carbon - meth-
- 2 carbon - eth-
- 3 carbon - prop-
- 4 carbon - but-
- 5 carbon - pent-
- 6 carbon - hex-
- 7 carbon - hept-
- 8 carbon - oct-
- 9 carbon - non-

- 10 carbon - dec-

Alkanes [$C_n H_{2n+2}$]

- Characterized by single carbon bonds
- Ends in -ane
- Chain identified by standard prefix
- All single bonds

Alkenes [Cn H2n]

- Ends in -ene
- Same prefix for identification
- Contains AT LEAST 1 DOUBLE bond
- For any organic chemical with more than 3 carbons, you have to specify WHERE in the chain the double bond occurs
    - I.e. 1-butene indicates first carbon being double bonded
- 2 carbon - ethene
- 3 carbon - propene
- 4 carbon - butene
    - 1-butene indicates first carbon being double bonded
    - 2-butene indicates second carbon being double bonded
- 5 carbon - pentene
- 6 carbon - hexene
- 7 carbon - heptene
- 8 carbon - octene
- 9 carbon - nonene
- 10 carbon - decene

Alkynes

- Ends in -yne
- Same prefix for identification
- Contains AT LEAST 1 TRIPLE bond
- For any organic chemical with more than 3 carbons, you have to specify WHERE in the chain the triple bond occurs
    - I.e. 1-butyne indicates first carbon being triple bonded
- 2 carbon - ethyne
- 3 carbon - propyne
- 4 carbon - butyne

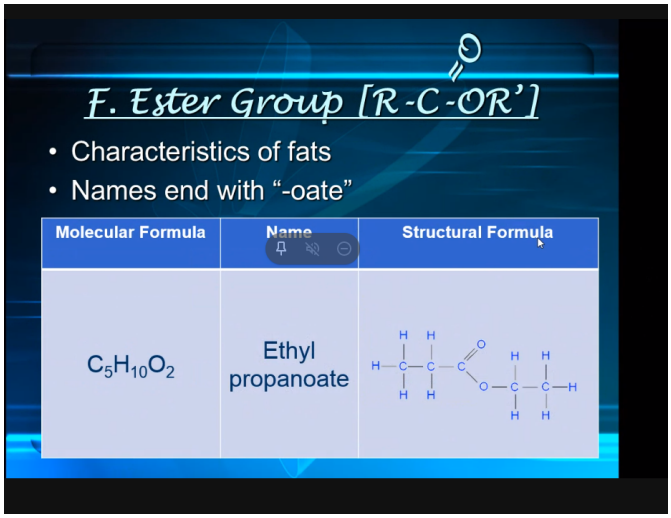
    - 1-butyne indicates first carbon being triple bonded
    - 2-butyne indicates second carbon being triple bonded
- 5 carbon - pentyne
- 6 carbon - hexyne
- 7 carbon - heptyne
- 8 carbon - octyne
- 9 carbon - nonyne
- 10 carbon - decyne

Functional Groups

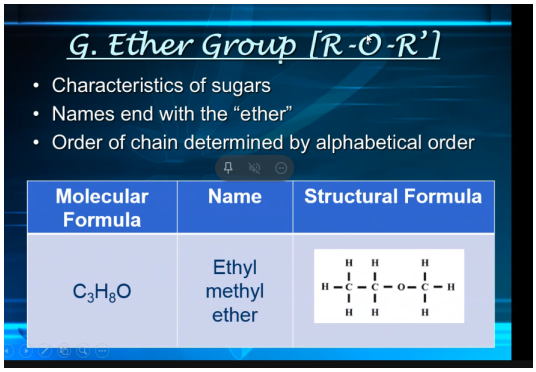
- Possess certain chemical properties
- More reactive than hydrocarbon portions
- hydrophilic except for phosphates??

- Hydroxyl group
    - [R-OH]
    - Characteristics of alcohol
    - Names end in -ol
    - Ex: methanol
- Aldehyde group
    - characteristics of sugars
    - [R-C-H]
      =O
    - names end in -al
    - Ex. butt anal :(())
- Ket**one** group
    - Characteristics of sugar
    - Names end in -one
    - R - C - R’
      =O
    - Ex. propanone
- Carboxyl group
    - Characteristics of organic acid
    - names end in -oic acid
    - [R-C-OH]
      =O
    - Ex. propanoic acid
- Amino group
    - characteristics of amino acid
    - Name has amino
    - [R - N - H]
      H

- Ester group
    - Characteristics of fats
    - End in -oate
    - [R - C - OR']
        =O



    - May have substituent chains attached which will need to be named
- Ether group
    -



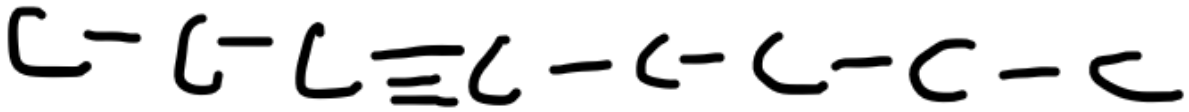
Hi. My name is Andrew and I have had literally no coffee in 7 months

Practice Questions done in class:

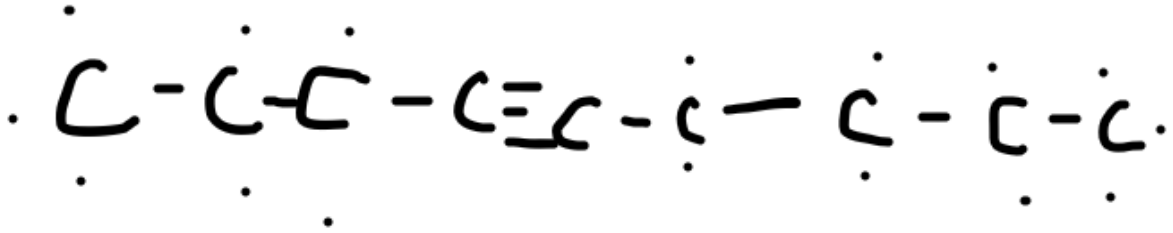
PART1: doc 1
2, 5, 9, 10, 12, 13, 15, 18, 20, 23

2.

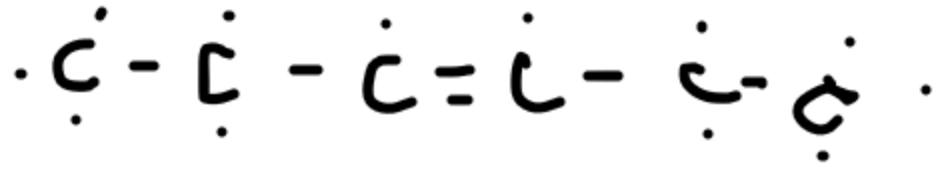
5.



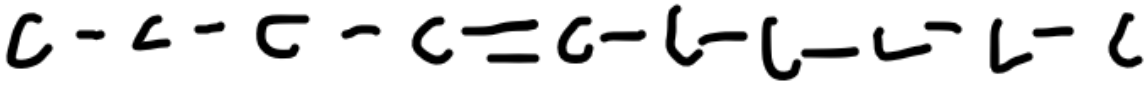
9.



10.



12. Order in lowest numbers possible. Called 4-decene



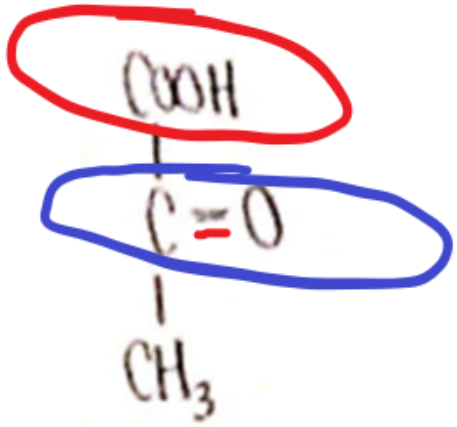
13. 3-heptene
15. octane

18. 2-butyne
20. 4-decene
23. 2-hexene

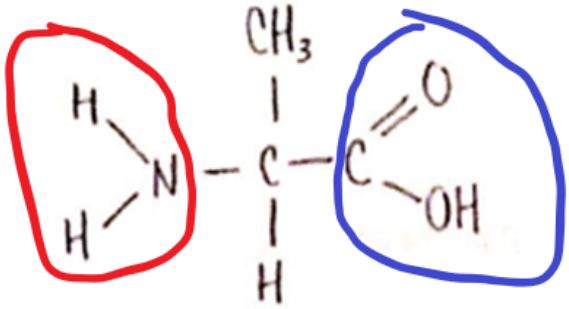
PART 2: doc 3

All of p.1, p.3 # 1 - 3, 5 - 7

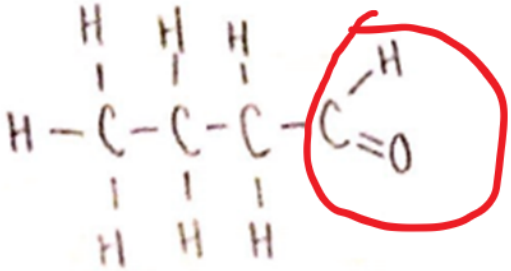
1. Carboxyl group (Red) and Ketone group (blue)



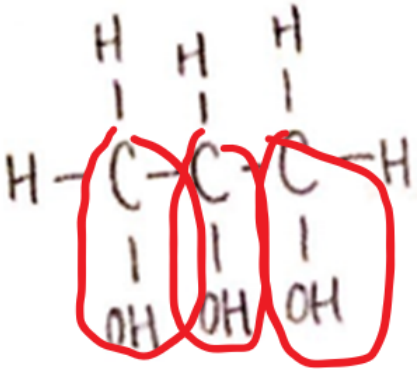
2. Carboxyl group (Blue) and Amino group (Red)



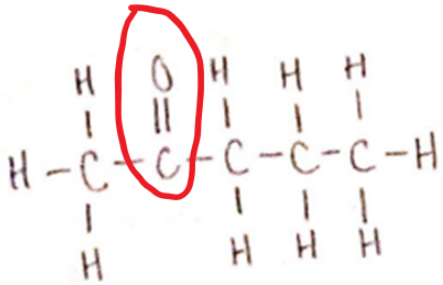
3. Aldehyde group



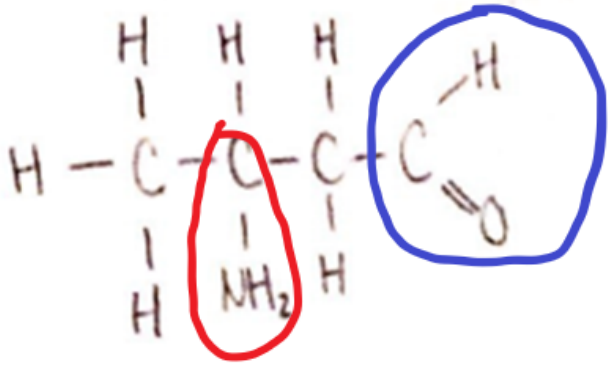
4. Hydroxyl group



5. Ketone



6. Amino group (Red) and Aldehyde group (Blue)



7.

8.

1.

2.

3.

5.

6.

7.