

Organic HW #1

Your Name _____

Hydrocarbons Only Tables P & Q Draw all the molecules, answer all the questions, do not copy anyone's work.

| | | |
|----------|---------|-----------|
| ethane | methane | pentane |
| propene | ethene | 2-hexene |
| ethyne | propyne | 2-butyne |
| octane | | 2-pentyne |
| 2-nonyne | | |

On the back do these six problems (use plenty of space, write neatly).

1. Define HOMOLOGOUS SERIES.
2. How many homologous series of hydrocarbons exist? What are their names?
3. Which of these series are UNSATURATED hydrocarbons?
4. Which of these series are SATURATED hydrocarbons?
5. If you know you have an alkene with 17 carbon atoms, how many hydrogen atoms are bonded to them? (show math, including the general formula).
6. If you know you have an alkyne with 11 carbon atoms, how many hydrogen atoms are bonded to them? (show math, including the general formula).

Organic HW #2

Your Name _____

Halocarbons, Alcohols, Ethers, Aldehydes, and Ketones Draw all the molecules, do not copy anyone's work. In this HW, you do not need to draw in any H atoms - except in the aldehyde functional groups.

| | | |
|----------------------|-------------------|--|
| diethyl ether | propanal | propyl butyl ether |
| ethyl propyl ether | propanone | 2-bromo, 3,5 dichloro, 4-fluoro 1-hexyne |
| 1,1,2 tri iodoethane | butanal | hexanal |
| bromoethene | bromoethyne | 2-hexanone |
| methanol | 3-chloro 1-butyne | 3-pentanol |
| dimethyl ether | ethanol | 2 chloro 1-butene |
| 4-octanol | | 1,2,3,4 tetrachloro 2-hexene |

Organic HW #3

Your Name _____

Acids, Esters, Amines and Amides. Do not draw in any H atoms, except in the functional groups.

| | | |
|-----------------------------------|-----------------|------------------|
| ethanoic acid | ethanamine | propyl ethanoate |
| methanamine | ethanamide | ethyl propanoate |
| propanoic acid (draw to the left) | butyl hexanoate | |
| 3 hexanamine | | butanoic acid |
| methanoic acid | hexanimide | |
| pentanal | | propanamine |

Organic HW #4

Your Name _____

Organic Reactions Substitution, Addition, Esterification, Fermentation

Show the structural diagrams of the molecules propyne + bromine in an addition reaction, and name the big product

Show the structural diagrams of the molecules propane + chlorine in a substitution reaction (name the big product)

Show the esterification reaction between methanol and butanoic acid (name the big and small products)

Show the substitution reaction between butane and bromine (name the big product)

Show the esterification reaction between propanol and methanoic acid (name the big products properly)

Show the substitution reaction between IODINE and ethane (name the bigger product)

Show the addition reaction between 2butyne and fluorine (name the product)

Show the balanced reaction of glucose fermenting into ethanol and carbon dioxide in the presence of yeast.

Organic HW #5

Your Name _____

Write out the condensed structural formulas at top, then draw molecules below.

| | | | |
|-----------------------|-------------------------------------|------------------|-----------------------------------|
| Example: propane | $\text{CH}_3\text{CH}_2\text{CH}_3$ | Example: ethanol | $\text{CH}_3\text{CH}_2\text{OH}$ |
| pentane | | 2-hexyne | |
| 2-pentanone | | butanal | |
| ethyl propyl ether | | pentanoic acid | |
| 2-butanol | | 2-pentanamine | |
| ethanamide | | propyl butanoate | |
| 2,3 dibromo,1-pentene | | 1fluoro 3-hexyne | |

Draw pentane

Draw an branched alkane isomer of pentane and name it correctly

Draw dipropyl ether

Draw an isomer of dipropyl ether (an alcohol) and name it properly

Draw 2,2 dimethyl pentane

Draw an isomer of 2,2 dimethyl pentane and name it properly