

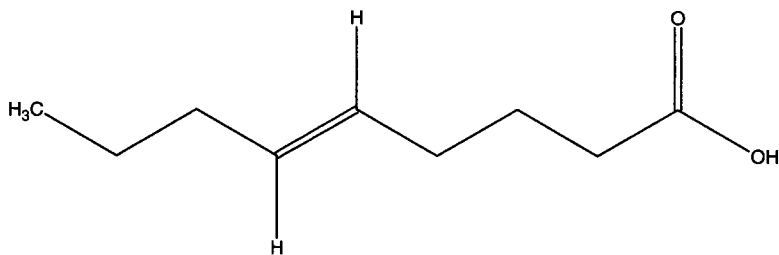
Honors Chemistry

Organic Chemistry

hcorganicws3.doc

Name: Key Date: _____ Period: _____

1. The following molecule would best be described as:



- a. An unsaturated cis-fatty acid.
- b. An unsaturated trans-fatty acid.**
- c. A saturated cis-fatty acid.
- d. A saturated trans-fatty acid.

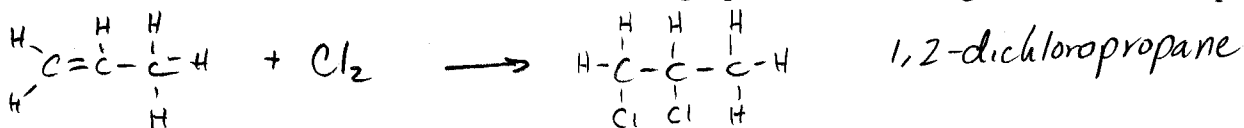
2. Match the items with their most appropriate descriptions:

- | | |
|--|---|
| <u>c</u> 1. amines | a. n-butane and methylpropane |
| <u>d</u> 2. addition reaction | b. carcinogen in burned meat and cigarettes |
| <u>j</u> 3. phenyl group | c. organic bases |
| <u>b</u> 4. benz(a)anthracene | d. hydrogenation |
| <u>a</u> 5. structural isomers | e. hydroxyl |
| <u>h</u> 6. aromatic hydrocarbon | f. carboxyl |
| <u>f</u> 7. -COOH | g. carbonyl |
| <u>e</u> 8. -OH | h. containing benzene or benzene-like structures |
| <u>g</u> 9. functional group common to aldehydes and ketones | i. from wood distillation / metabolized into formaldehyde |
| <u>i</u> 10. methanol | j. benzene as a substituent |
| <u>l</u> 11. C ₆ H ₅ OH | k. reaction in the formation of esters |
| <u>k</u> 12. condensation reaction | l. phenol |

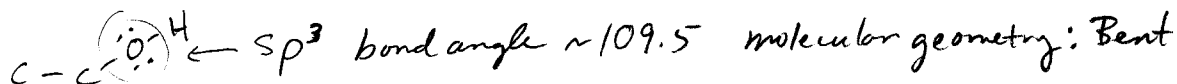
3. Which term doesn't go with the others? (Circle one)

alkyl group substituent **division** branch

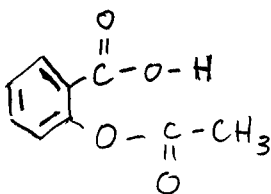
4. Write the process for the addition reaction between propene and chlorine gas. Name the compound.



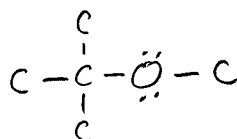
5. Determine the hybridization, bond angle and molecular geometry central to the oxygen in an alcohol.



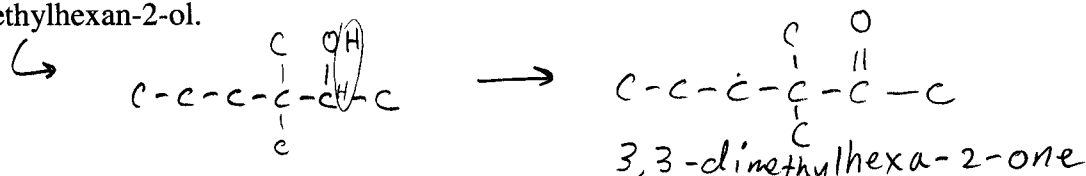
6. The formal name for aspirin is acetylsalicylic acid, and has the structure (draw below).



7. A gasoline additive MTBE (methyltert-butylether) is used as an anti-knock additive that also helps reduce CO emissions. Draw the structure for this compound.



8. Draw the structure and write the name for the compound that will form from the oxidation of 3,3-dimethylhexan-2-ol.



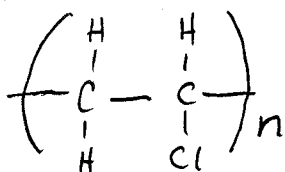
9. Explain what is meant by "resonance" as it pertains to the benzene ring. Why is a circle commonly used when representing the middle of the ring structure?

The single and double bonds resonate back & forth in the ring structure. The circle represents the delocalized p-orbital electrons.

10: What is the most common use of hydrocarbons?

Fuel (combustion)

11. Draw the general formula for the polymer that would form from the monomer polyvinyl chloride (PVC), $\text{CH}_2=\text{CHCl}$



12. Draw and name all the structural isomers of n-hexane (Hint: There are 5 including n-hexane itself).

