Chem 130: Chemistry for Funeral Services

Problem Set 7: Due 3/21/06

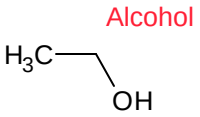
Name: KEY Date:

Each question is worth one point except Problem 3 (2 points) and Problem 5 (5 points).

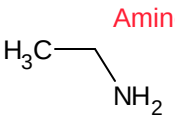
1. What is the combining power of carbon and why? Use atomic theory to explain your answer.

Carbon has a combining power of 4. It has six overall electorns but only 4 are in the valence shell. The valence wants to have a complete set of eight electrons. Since it only has 4, it can combine to gain 4 more electrons through shared bonds.

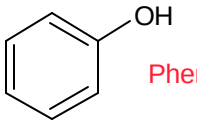
2. Identify the type of functional group in each of the following molecules.



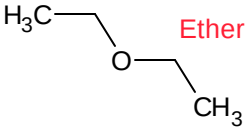
Alcohol



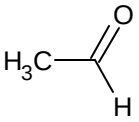
Amine



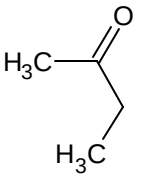
Phenol



Ether

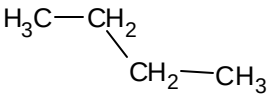


Aldehyde

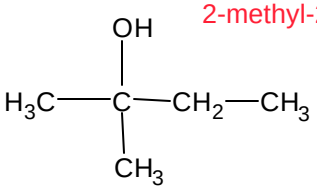


Ketone

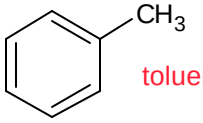
3. Name the following molecules. (2 points.)



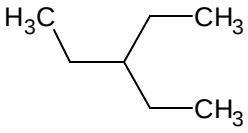
Butane



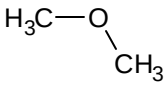
2-methyl-2-butanol



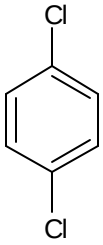
toluene



3-ethyl pentane



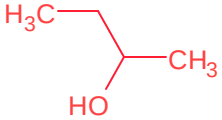
dimethyl ether

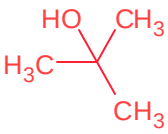


paradichlorobenzene

4. What is the difference between a primary, a secondary and a tertiary alcohol? Give an example of each.

A primary alcohol has only one carbon attached to the carbon containing the hydroxy (alcohol) group. A secondary alcohol has two carbons attached to the hydroxy carbon. A tertiary carbon has three carbons attached to the hydroxy carbon. An example is n-butyl alcohol (primary), sec-butyl alcohol (secondary) and tert-butyl alcohol (tertiary).





5. Complete a functional group worksheet for phenols. (5 points.)

See comments on your worksheet. Be sure to complete each section and discuss the information asked for in each section. Check with me if you have questions.