CHEM 131 STUDY GUIDE for EXAM #1

The exam will be on Tuesday, October 26th from 8 am until 9:50. It is a close book exam but you will be provided with a periodic table and a chart of electronegativities on the exam.

The exam will cover: All sections of Chapter 11, except sections 11.6 and 11.9. For chapter 12 all sections except for 12.4. Chapter 13 study all sections except for 13.9 and 13.10

In general be expected to know:

Given a name, be able to draw the structure of an alkane, alkene and alcohol.  
Know the structure for these aromatic compounds: Benzene, toluene and phenol  
Be able to recognized and aromatic/benzene component of a molecule,  
Be able to draw structures including location of lone pair electrons  
Be able to draw a full expanded, condensed, and line structure of a molecule  
Be able to recognized and depict any bonds that contain a dipole and place the $\delta^+$ and $\delta^-$ symbols on the appropriate atoms.  
Know how to depict hydrogen bonding as on pg 410 of your text.  
Know how to predict if two compounds are soluble (can mix)  
Know how to predict relative boiling points of alkanes & alcohols.

Be able identify the following functional groups: Alkane, Alkene, alcohol, ether, alkynes amines, esters, carboxylic acid, ketone, aldehyde amide and aromatic/benzene compounds. (see chart on pg 342)

Be able to distinguish between a primary, secondary and tertiary alcohol.

You only have to know how to name simple alkanes/alkenes and alcohols (up to 10 carbons long)

You do not have to name the rest: ether, alkynes amines, esters, carboxylic acid, ketone, aldehyde amide and aromatic/benzene compounds.

Reactions to know:

Combustion of alkanes, (pg 362 of your text)  
Addition reactions of Alkenes ( $H_2$, $Br_2$, water, and HCl/HBr--pg 381 of your text)  
Oxidation reaction of alcohol (pg 412 of your text)

You do not need to know:

Any thing regarding sp2/sp3 orbital’s or the shapes of orbitals.  
The dehydration reaction of alcohols