

## Chem 51A – SSI 2013

### Discussion 4 Worksheet

Dr. Renee Link

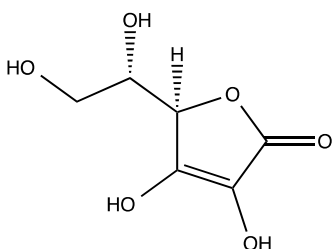
This worksheet will focus on concepts to be discussed or already discussed, in Chapter 3. Those concepts being 1) Functional Groups 2) Intermolecular Forces

On a practical note, we **STRONGLY** recommend you work on these sheets using erasable pencil.

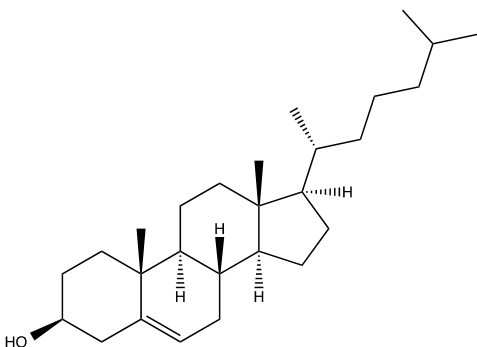
#### 1. Functional Groups

Circle and label all functional groups in the following naturally occurring organic molecules.

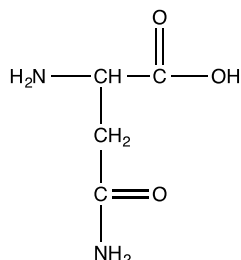
##### A. Vitamin C



##### B. Cholesterol



##### C. Asparagine (amino acid)



D. Look at the ingredients on something from your home. Pick one that you do not know and look up the structure. Draw structure and label all functional groups.

E. Draw an aldehyde with the formula  $C_4H_8O$ .

F. Draw isomers with the formula  $C_5H_{12}O$  – indicate if they are primary, secondary or tertiary alcohols.

G. Draw isomers with the formula  $C_3H_9N$  – indicate if they are primary, secondary or tertiary amines.

## 2. Intermolecular Forces

A. Functional groups determine which properties in a molecule?

1)

2)

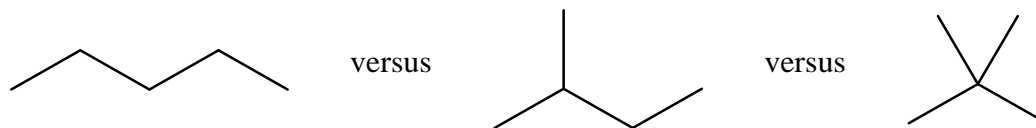
3)

4)

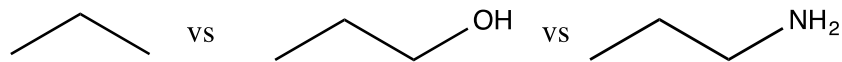
5)

B. Which of the choices from the following has a highest boiling point?

I.



II.



C. Draw hydrogen bonding between six water molecules.

D. Which of the following is likely to be soluble in water?

