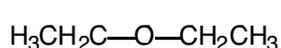


Exam 2 Drill Sheet
NESA Organic Chemistry
Spring 2002

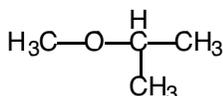
Here are some sample problems for the upcoming exam. They are representative of the level of understanding that will be required to answer the majority of the questions on the exam correctly. This means that the similar concepts may be asked in a different manner. All of the questions here are free response. On the exam there may be some multiple-choice questions and a few questions that will challenge you to apply concepts beyond what is shown here. There will be an opportunity to go over this sheet before the exam.

Nomenclature

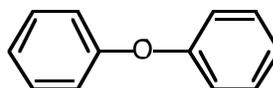
For the following: If a structure is drawn give the IUPAC or common name. If a name is shown draw the structure of the compound. For amines state whether they are primary, secondary, or tertiary. These simple are structures, I will also be asking about some mixed functional group compounds. You will be given a table showing the priority and prefixes of the functional groups we have studied thus far. You are responsible for knowing the rules for naming, functional group names, and suffixes.



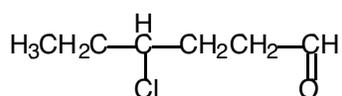
dimethyl ether



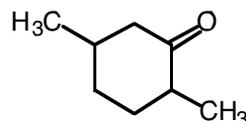
diisopropyl ether



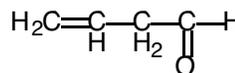
1-ethoxy-2-methylpropane



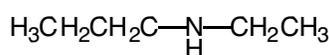
formaldehyde



2,4-dimethylpentanal

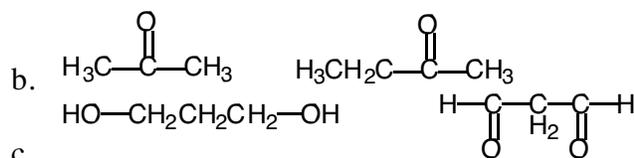


2,4-dimethyl-3-pentanone

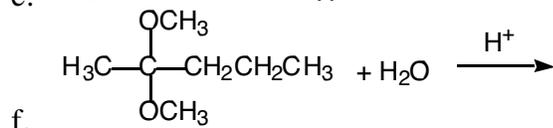
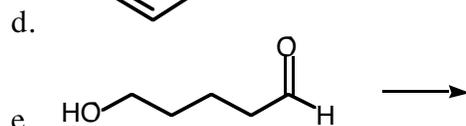
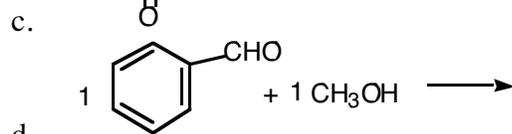
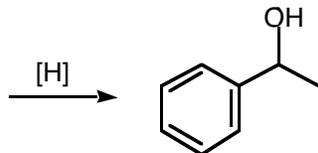


Problems:

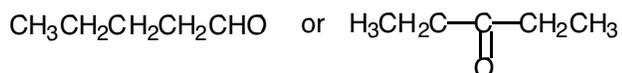
- List in order of increasing solubility: propanol, propanethiol, diethyl ether.
- Write an equation for the following:
 - Oxidation of ethanethiol
 - Reduction of the disulfide $\text{H}_3\text{CH}_2\text{CH}_2\text{C}-\text{S}-\text{S}-\text{CH}_2\text{CH}_2\text{CH}_3$
- Why does methanethiol have a lower boiling point (6 °C) than methanol (65 °C), even though it has a higher molecular weight?
- For each pair, which compound would have the higher boiling point.
 - CH_3CHO $\text{CH}_3\text{CH}_2\text{OH}$



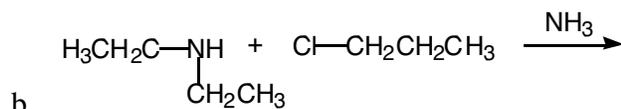
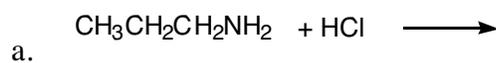
c.
 5. Complete the following reactions:



6. If you were given a sample that was one of the two following compounds what simple tests could you use to tell which one it was?



7. Complete the following reactions:



8. propylamine, *N*-methylethylamine, and trimethylamine all have the same molecular weight. Yet trimethylamine has a much lower boiling point than the other two. Explain why.

9. Arrange the following in components order of increasing boiling point.

