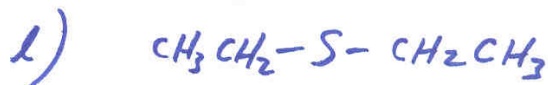
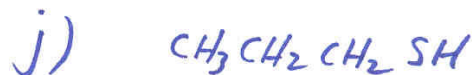
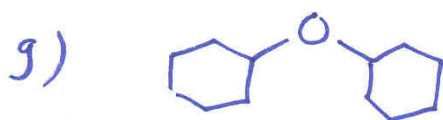
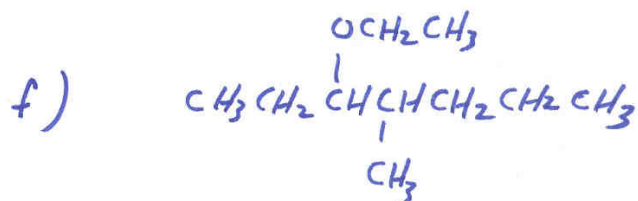
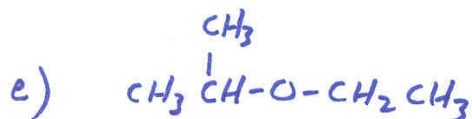
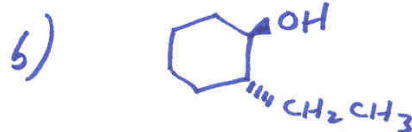
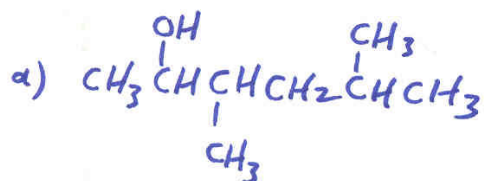


CHEM 2425 Practice Problems

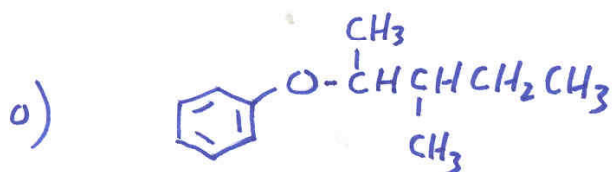
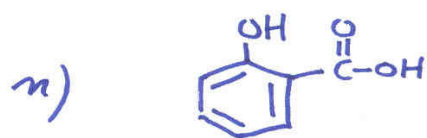
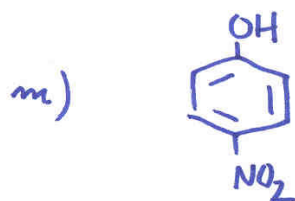
Chapter 17 - Alcohols and Phenols

Chapter 18 - Ethers and Epoxides

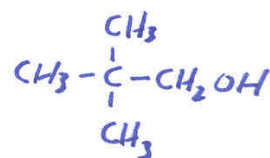
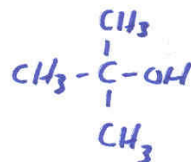
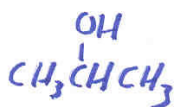
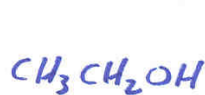
① Name the following compounds:



(1) Cont.

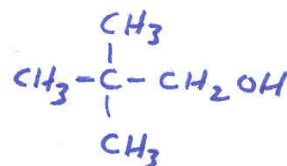
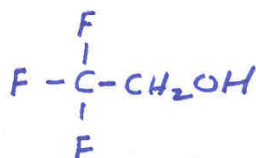


(2) Which alcohol should react most rapidly with the Lucas reagent ($\text{HCl}(\text{aq}) / \text{ZnCl}_2$) ?

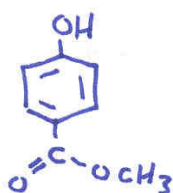
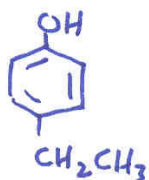
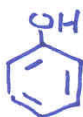


Write the products of the reactions of these alcohols with the Lucas reagent.

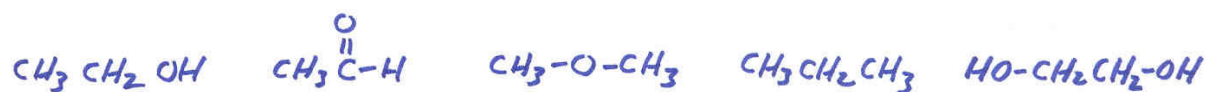
(3) Which alcohol is the most acidic? The least acidic?



(4) Which phenol is the most acidic? The least acidic?



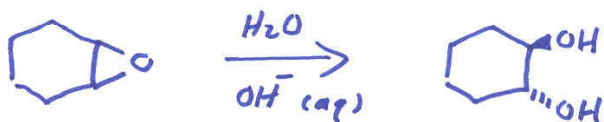
- (5) Rank the compounds below in order of increasing boiling point (lowest to highest) :



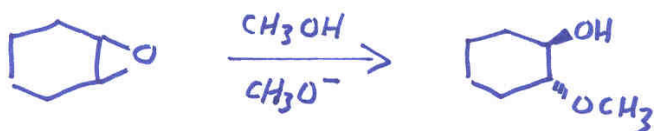
- (6) 12-crown-4 ether complexes Li^+ ion well. Draw the structure of the lithium ion complex of 12-crown-4, and explain how crown ethers enable ionic compounds such as LiBr to dissolve in nonpolar solvents.

- (7) a) Which is more acidic, phenol or cyclohexanol?
 b) Write the equations for the dissociation of H^+ ion from phenol and cyclohexanol.
 c) Explain your answer to a). Resonance structures would be very helpful!

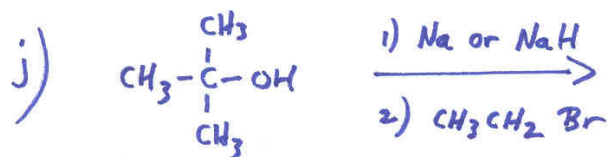
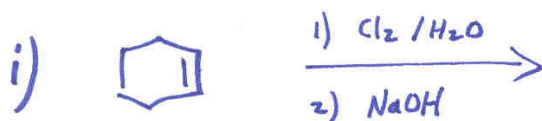
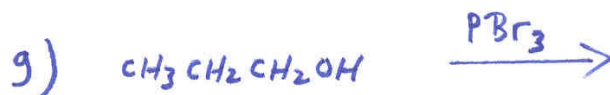
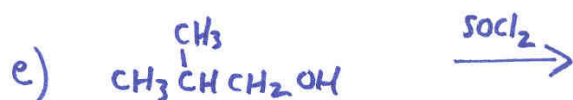
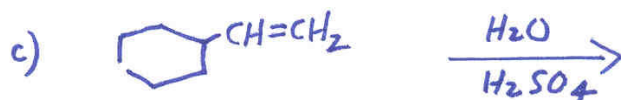
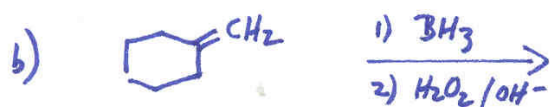
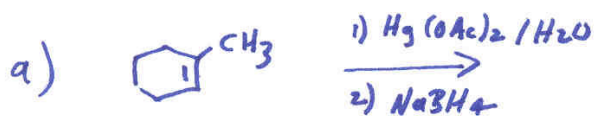
- (8) Give the base-catalyzed mechanism of the epoxide ring-opening reaction below:



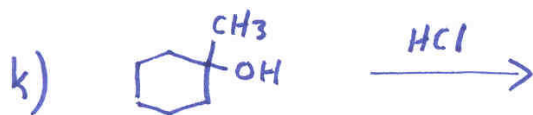
Now give the methoxide-catalyzed reaction mechanism for this reaction:



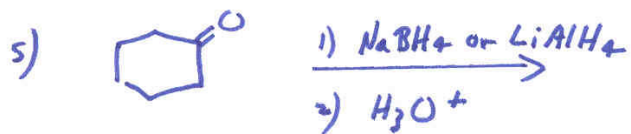
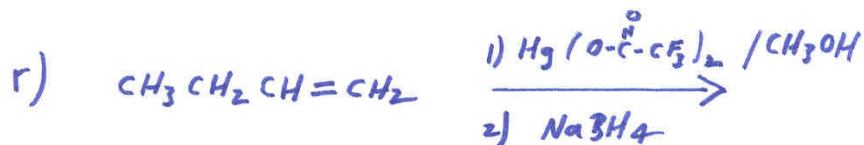
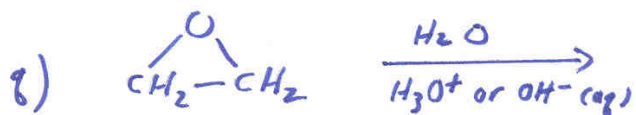
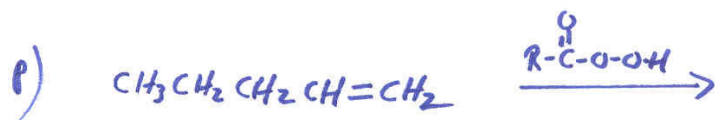
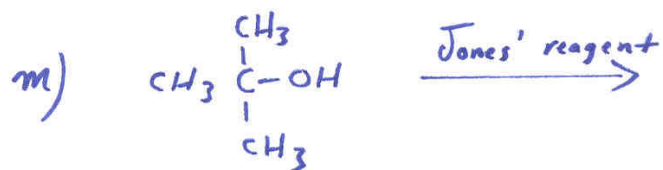
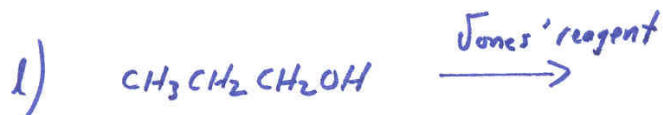
(9) Complete the following reactions :



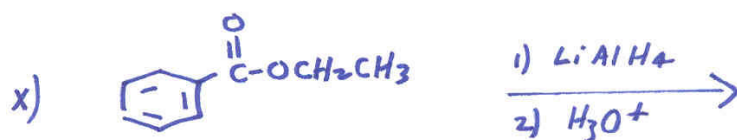
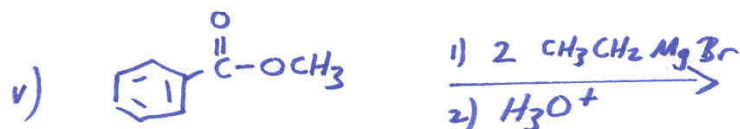
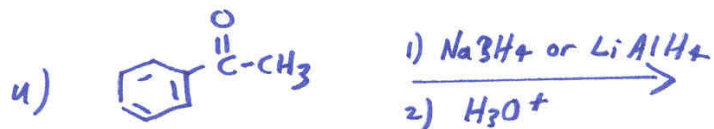
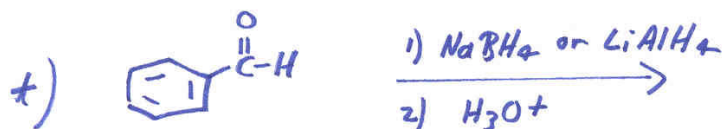
(9) Cont.



Can you give the mechanism of the above reaction?



⑨ Cont.



↑ Can you give the mechanism of this reaction?



↑ Hint: See question ⑧.

(10)

Show by a series of reactions how you could prepare the products below, starting with the given starting compound:

