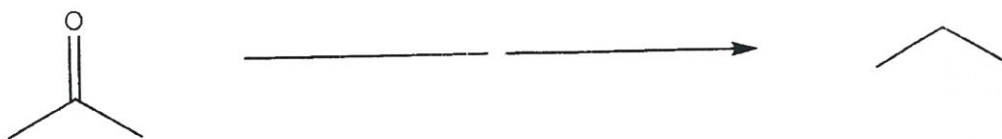
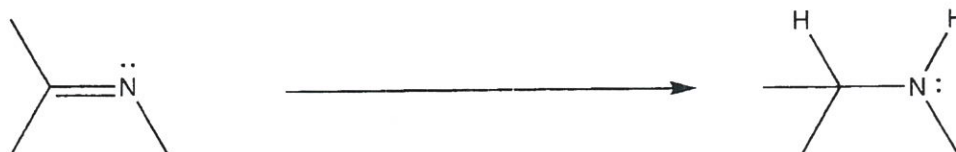


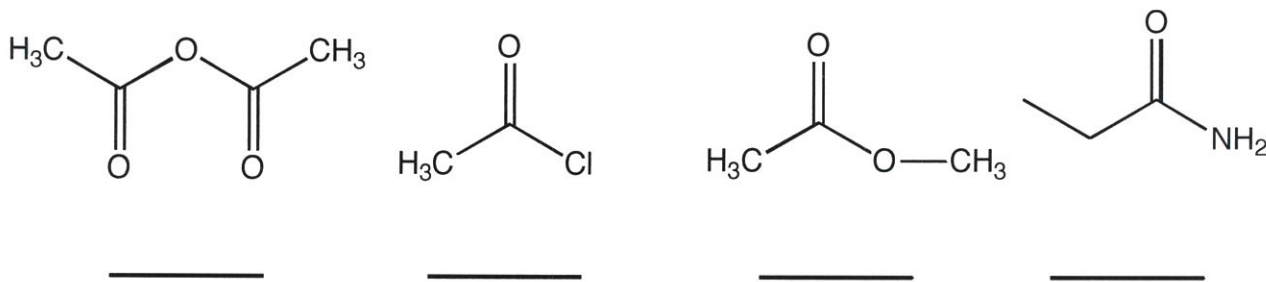
Identify the reducing reagent(s) that will perform the transformations below.



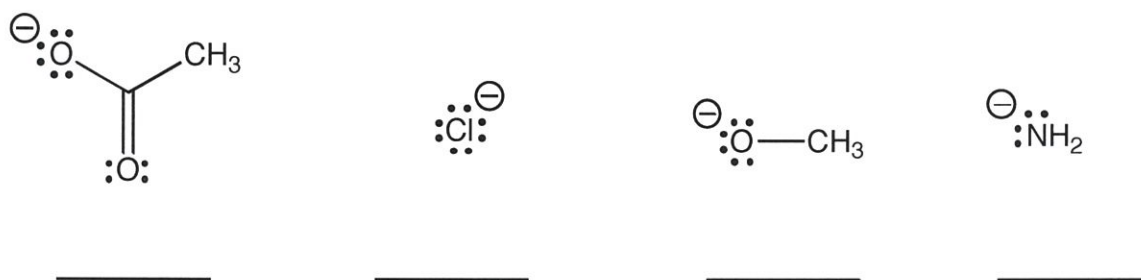
Signature _____

Pg 4 _____ (18)

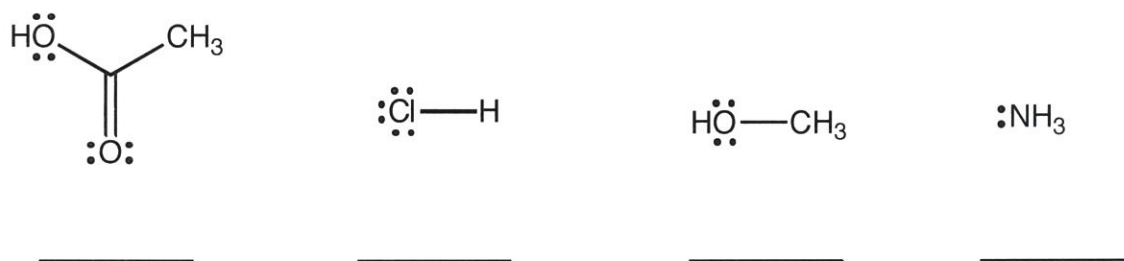
7. (4 points) Rank the following carboxylic acid derivatives with respect to reactivity with a nucleophile. Write a 1 under the most reactive, and a 4 under the least reactive derivative.



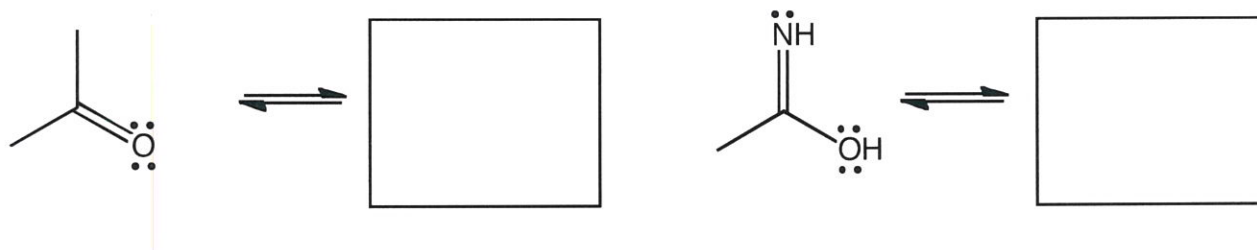
8. (4 points) Rank the following with respect to anion stability. Write a 1 under the most stable anion, and a 4 under the least stable anion.



9. (4 points) Rank the following in terms of relative acidity, with a 1 under the most acidic, and a 4 under the least acidic molecule.



10. (6 points) Each of the following undergo the process of tautomerization. For each draw the other major tautomer, then for each pair, circle the one that is more stable.

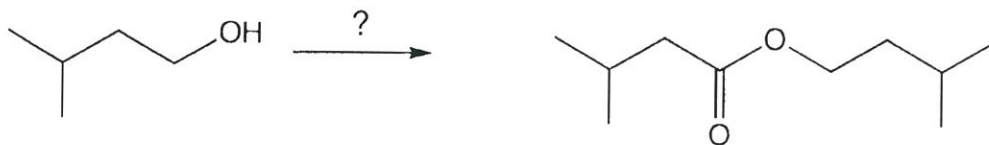


Signature _____

Pg 12 _____ (7)

17. (7 pts) Using any reagents turn the starting material into the indicated product. All carbon atoms must come from the starting material. Draw all molecules synthesized along the way. When in doubt, draw the molecule! Hint: this should look familiar as a homework problem.

All of the carbons of the product must come from the given starting material.



Signature _____

Pg 11 _____ (13)

17. Using any reagents turn the starting material into the indicated product. All carbon atoms of the product must come from the starting material. Draw all molecules synthesized along the way. When in doubt, draw the molecule! Label all chiral centers with an asterisk (*) and make sure to right "Racemic" where appropriate. Hint: this should look familiar as a homework problem.

Remember, all of the carbons of the product must come from the given starting material.

(13 pts)

B)

