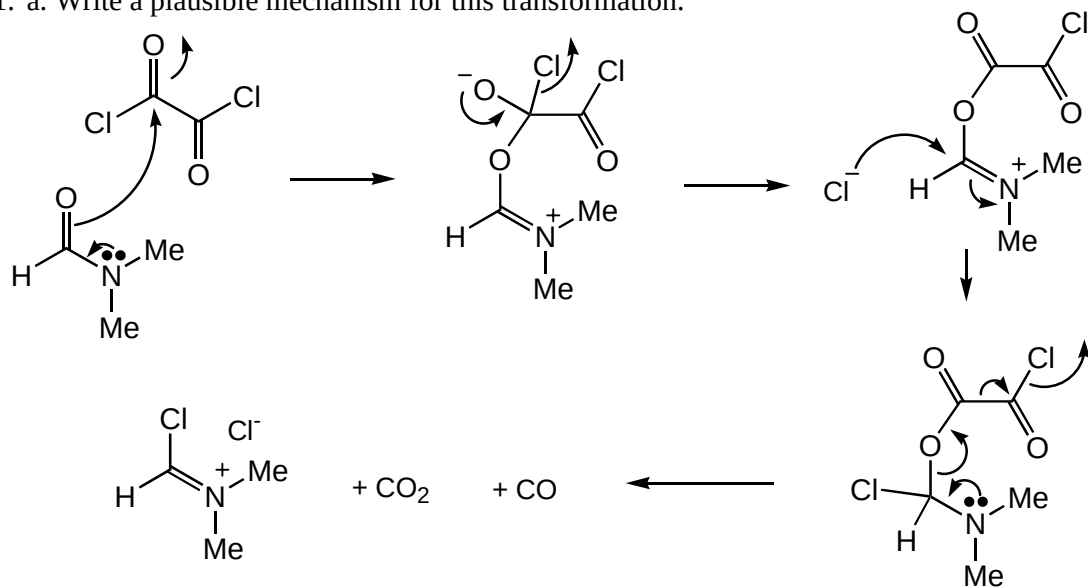


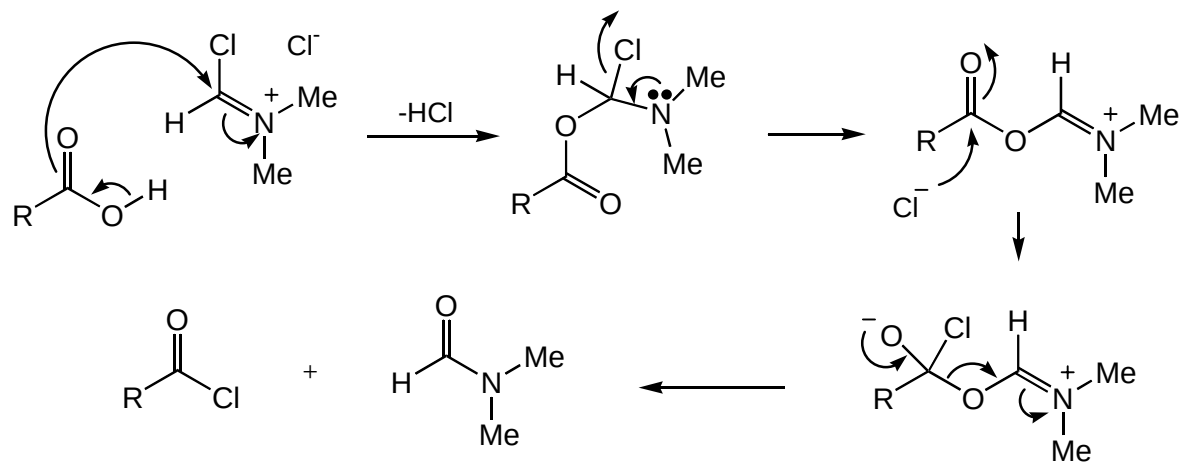
Organic Chemistry c3444y

Problem Set 7 - Answer Key

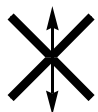
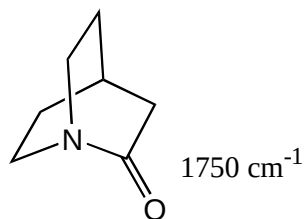
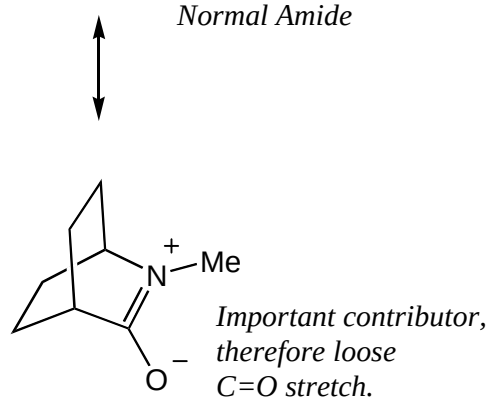
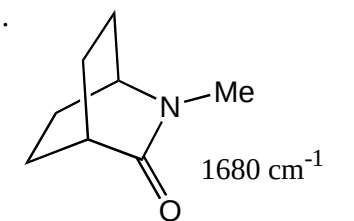
1. a. Write a plausible mechanism for this transformation.



b. Write a plausible mechanism for this transformation.

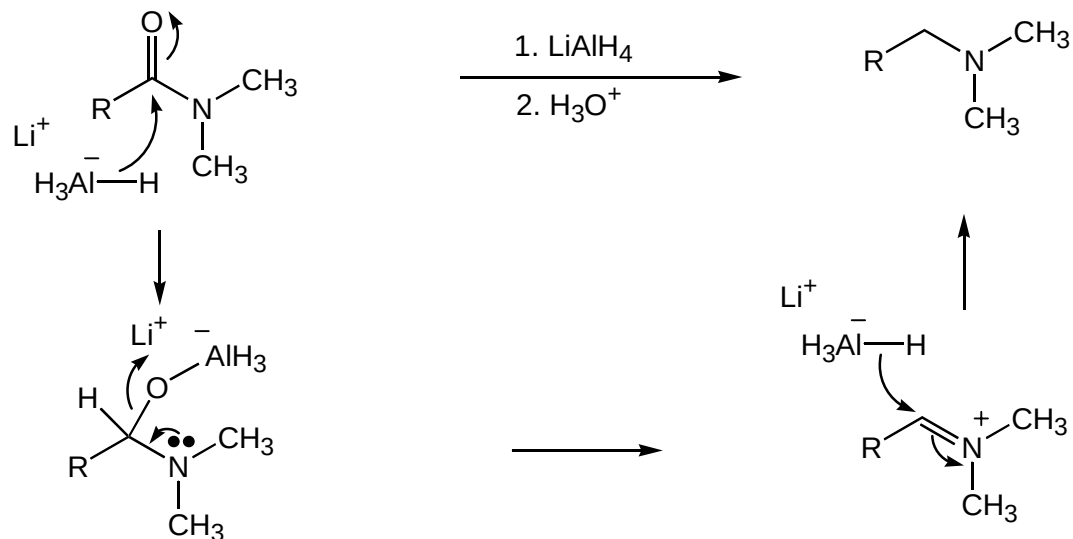


2.



Can't achieve orientation necessary for normal amide resonance!! Hypothetical p orbital on N constrained to lie orthogonal to the π -system of the carbonyl. So this carbonyl is like a ketone that happens to be attached to an electronegative atom. Thus the slightly higher frequency stretch than a normal ketone.

3. Provide a mechanism to account for this result.



The details of exactly what the state of the aluminum is during this reaction can be a little murky. The point here is that after the first hydride addition the nitrogen expelling the aluminum alkoxide species is a more favorable pathway than the oxygen expelling " $(\text{CH}_3)_2\text{N}^-$ ".

4. As we said in class, you are now ready for the first part of the Swern oxidation. Provide a mechanism for the following reaction:

