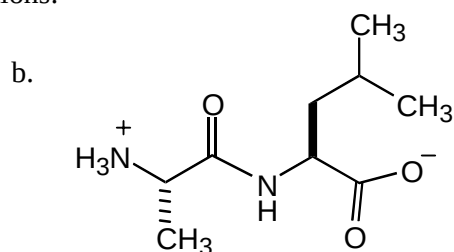
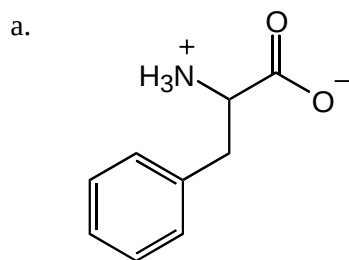


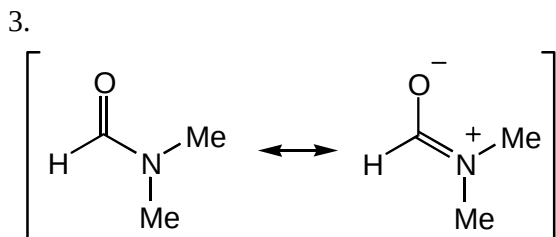
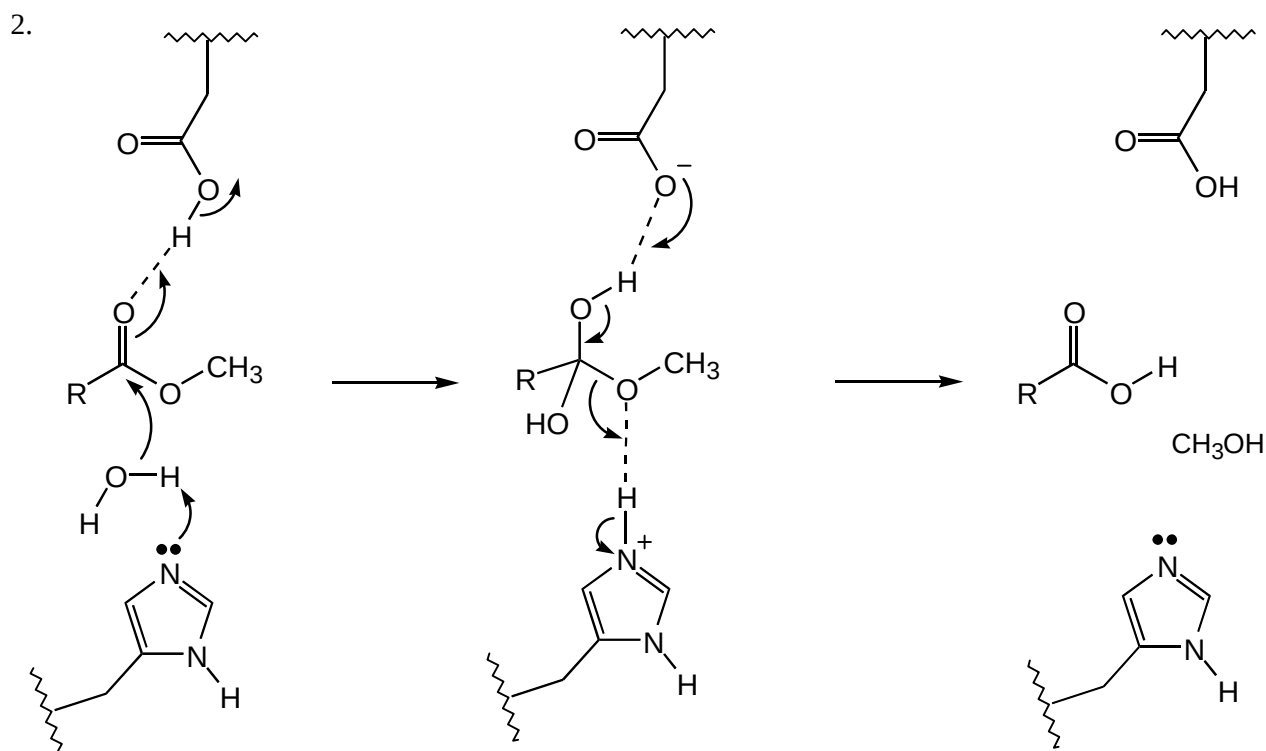
Organic Chemistry c3444y

Problem Set 10 - Answer Key

1. Draw the expected product of the following reactions:

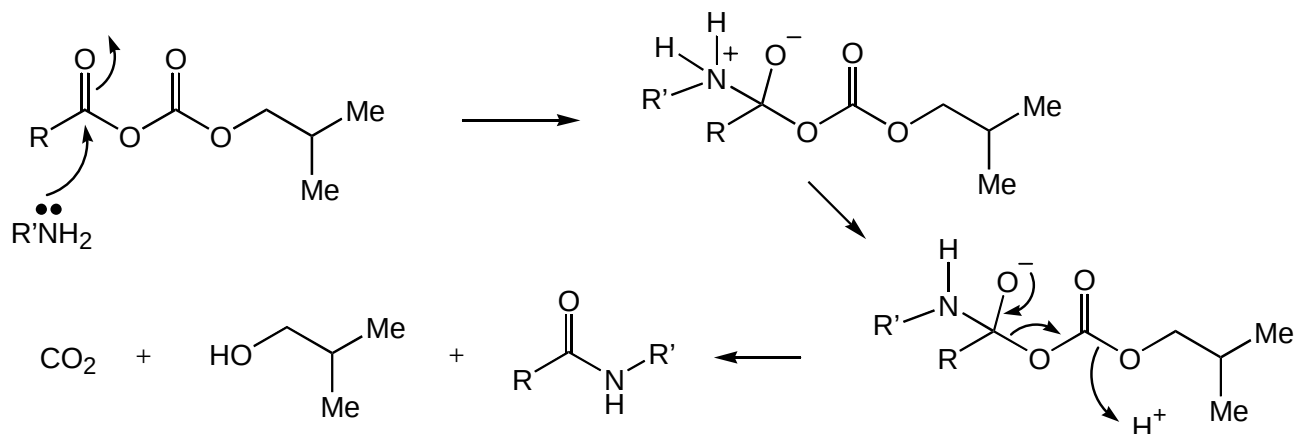
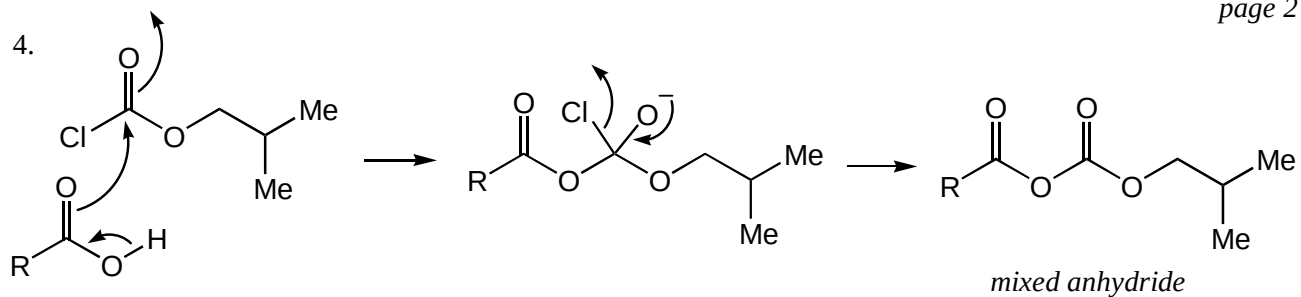


Hydrogenation will also remove the benzyl ester!

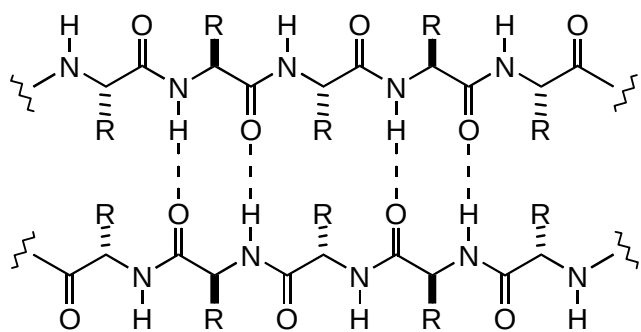


Because of resonance, there is hindered rotation about the C(O)-N bond. Compared to the time it takes to acquire the NMR spectrum, rotation about this bond is slow. The 2 methyl groups are experiencing different chemical environments, thus the two signals. When heated, however, the C-N bond can rotate rapidly. The spectrum thus displays an average of the two rapidly interconverting methyl groups.

Dimethylamine has a plane of symmetry and the two methyl groups are equivalent.



5. Antiparallel:



Parallel:

