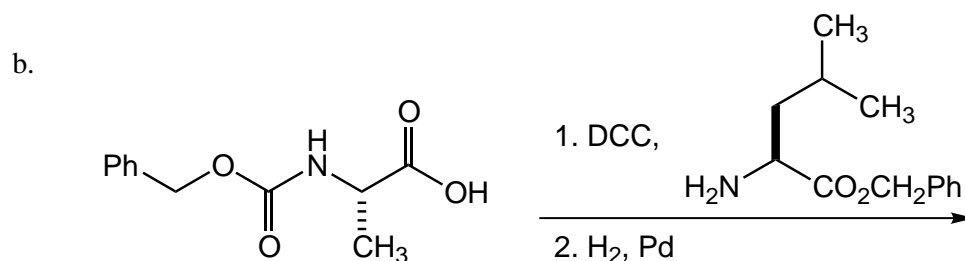
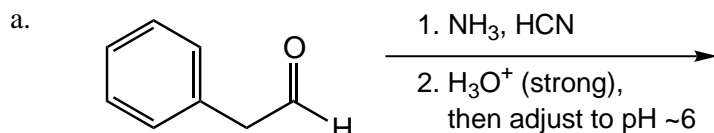


Organic Chemistry c3444y
Problem Set 8 - Amino Acids and Proteins I

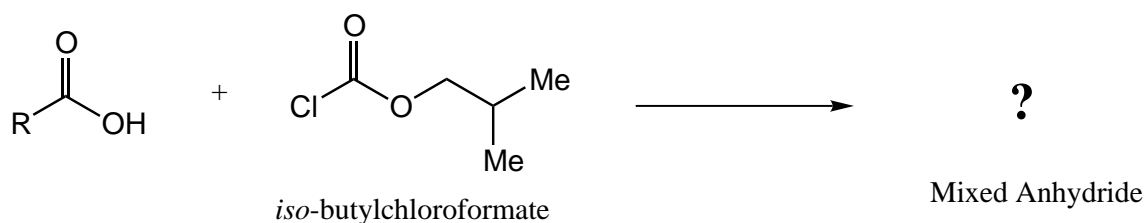
Relevant Reading: 26.1, 26.3, 26.7, 26.8, 26.10, 26.11, 26.13

Relevant Book Problems: 26.36, 26.44, 26.45, 26.49, 26.50, 26.51, 26.52

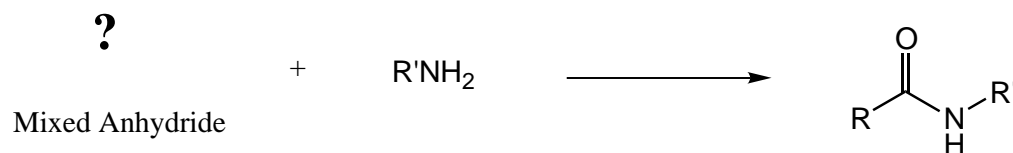
1. Draw the expected product of the following reactions:



2. We have seen that DCC is an efficient reagent for the synthesis of amides from carboxylic acids and amines. Many other reagents have been developed, such as *iso*-butylchloroformate. This first reacts with the carboxylic acid to produce a "mixed anhydride." Provide the structure of the mixed anhydride and a mechanism for its formation:



Now show the mechanism of the reaction of an amine with the mixed anhydride to produce an amide:



The mixed anhydride has two carbonyls. In principle, the amine could attack either one, but it doesn't. Why does the amine only attack the one carbonyl and not the other?