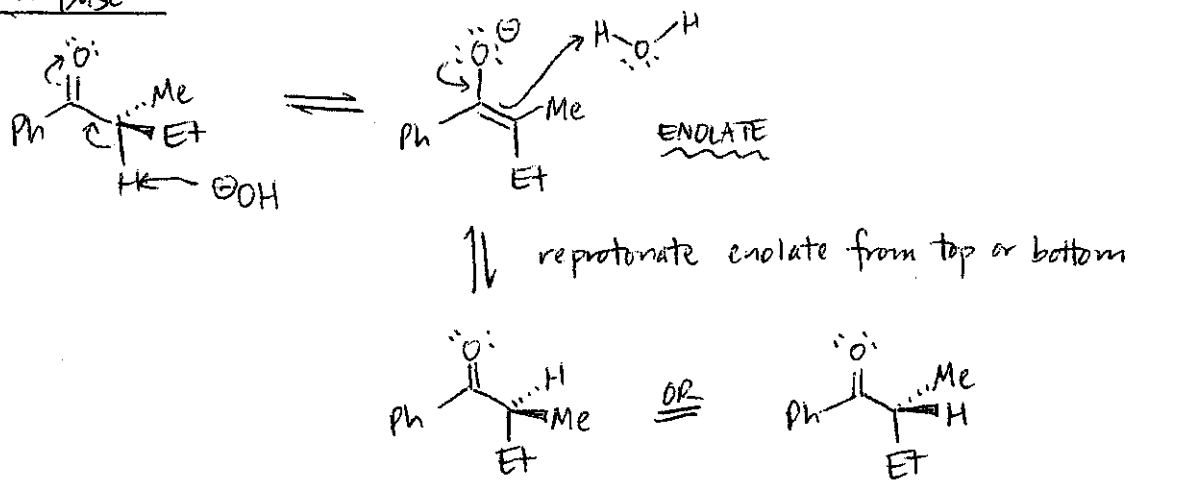
PROBLEM SET #7 – SOLUTIONS CHEM 3231

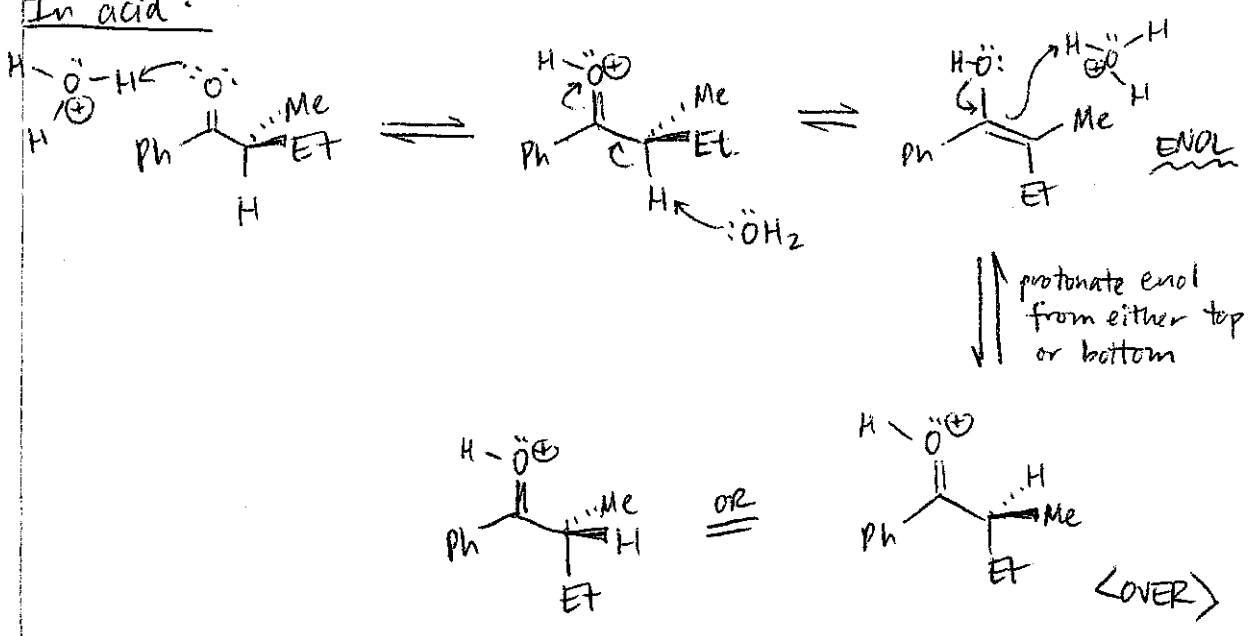
1. This problem was erroneously included in this week's problem set. You are NOT responsible for understanding/knowing it just yet.

Still, here is the solution:

In base:

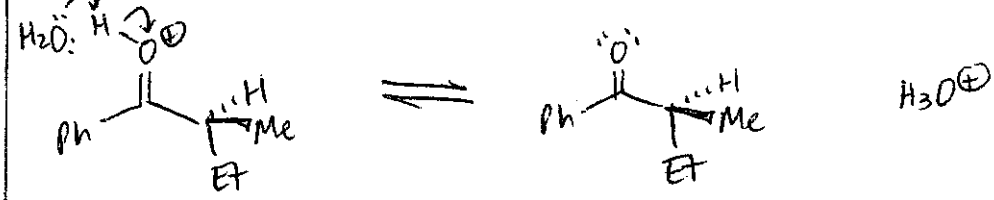


In acid:

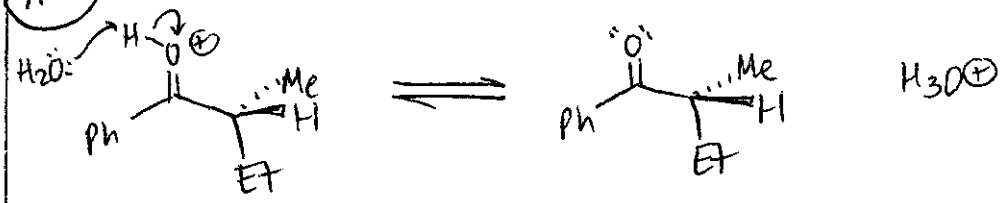


<OVER>

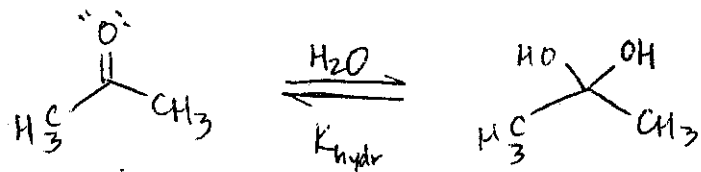
#1 (con't)



AND



2.

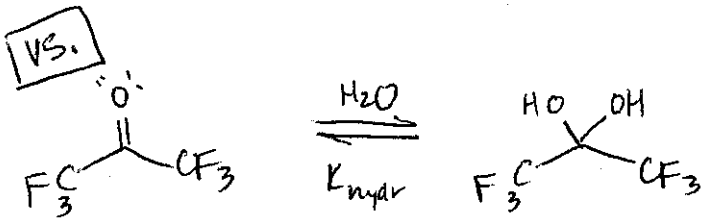


$K_{hydr} = 2 \times 10^{-3}$

∴ favors C=O form (reactants)

- alkyl groups (here, CH_3) stabilize C=O through electron donation

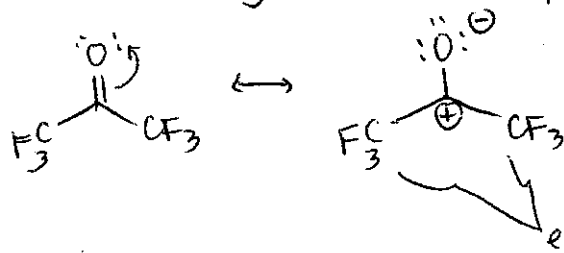
VS.



$K_{hydr} = 22{,}000$!

∴ favors hydrate form (products)

- CF_3's are very electron-withdrawing, so they destabilize the C=O, making it more susceptible to nucleophilic addition:



ewg destabilize ⊕ on C ⇒ easier for H_2O to add