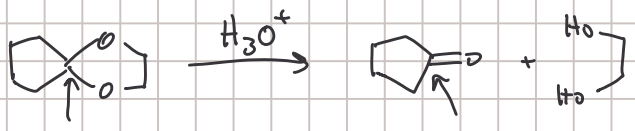
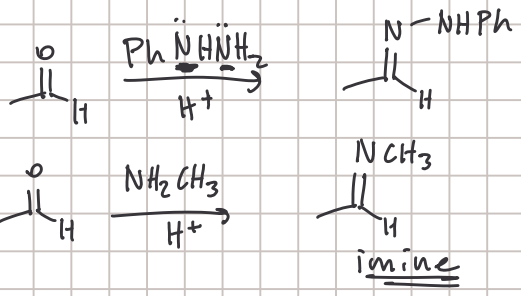
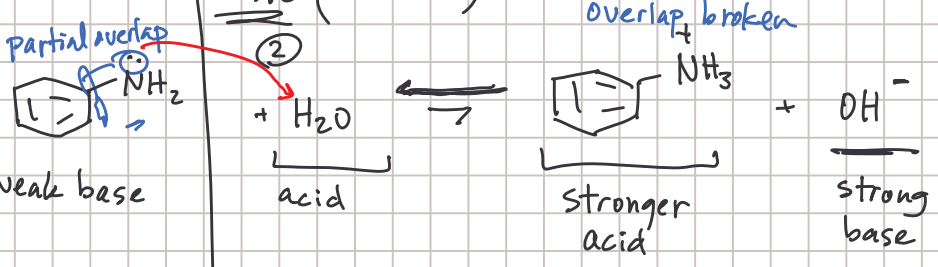
Ch 20

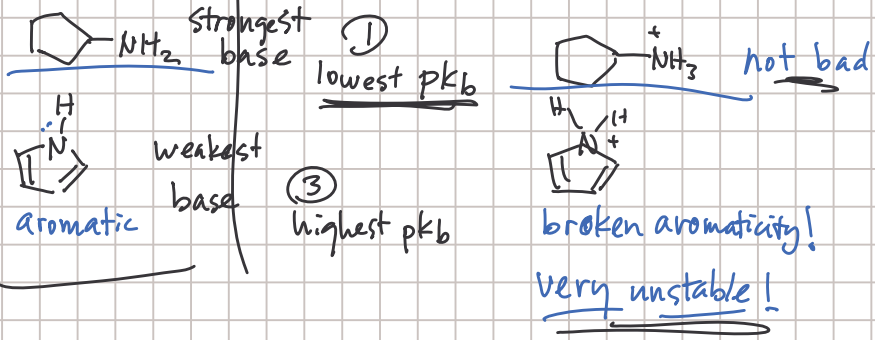
Note Title 4/5/2006

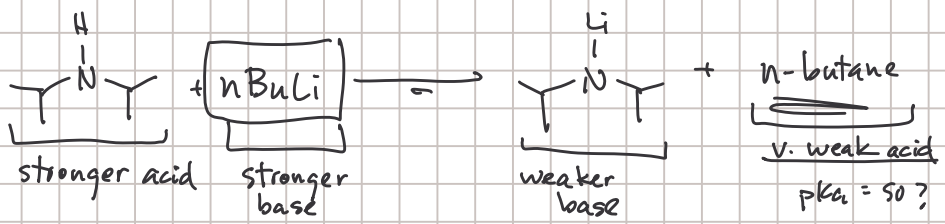




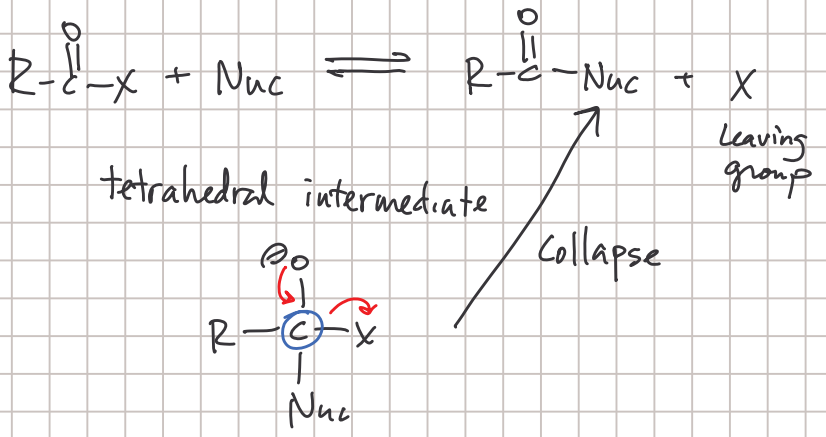
Amines are basic (in water)





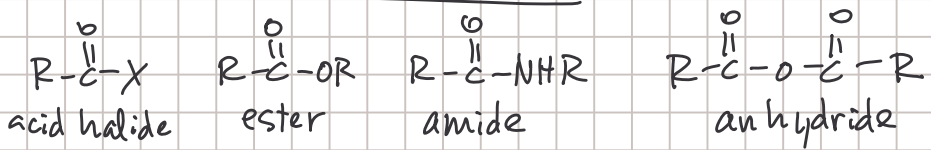


Nucleophilic acyl substitution

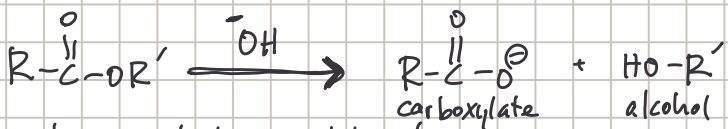


amine
imine
amide

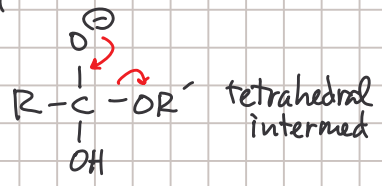
Carboxylic acid derivatives



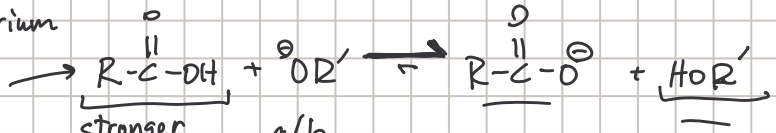
Ester hydrolysis



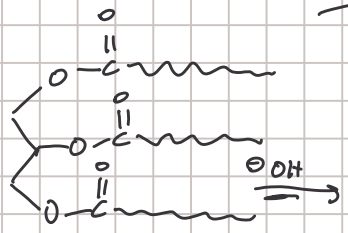
most commonly base-catalyzed

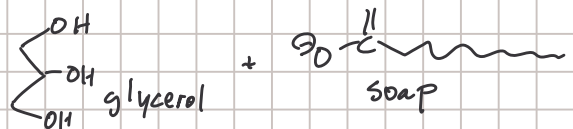
1) addition of ⁻OH to carbonyl → 

2) elimination of alkoxide L.G.

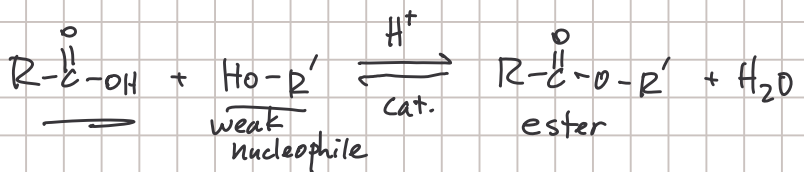
3) acid-base equilibrium → 

equilibrium drives reaction to completion





Fischer Esterification

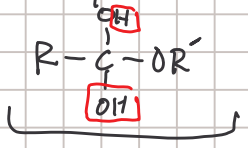


very reversible $K_{eq} = 1\text{-}10$

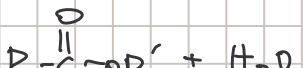
controlled by le Chatelier's princ.

- excess of 1 reactant
- removal of H_2O

mech: 1) acid-cat addition of alcohol → ester hydrate
(carbonyl protonated first - to activate)

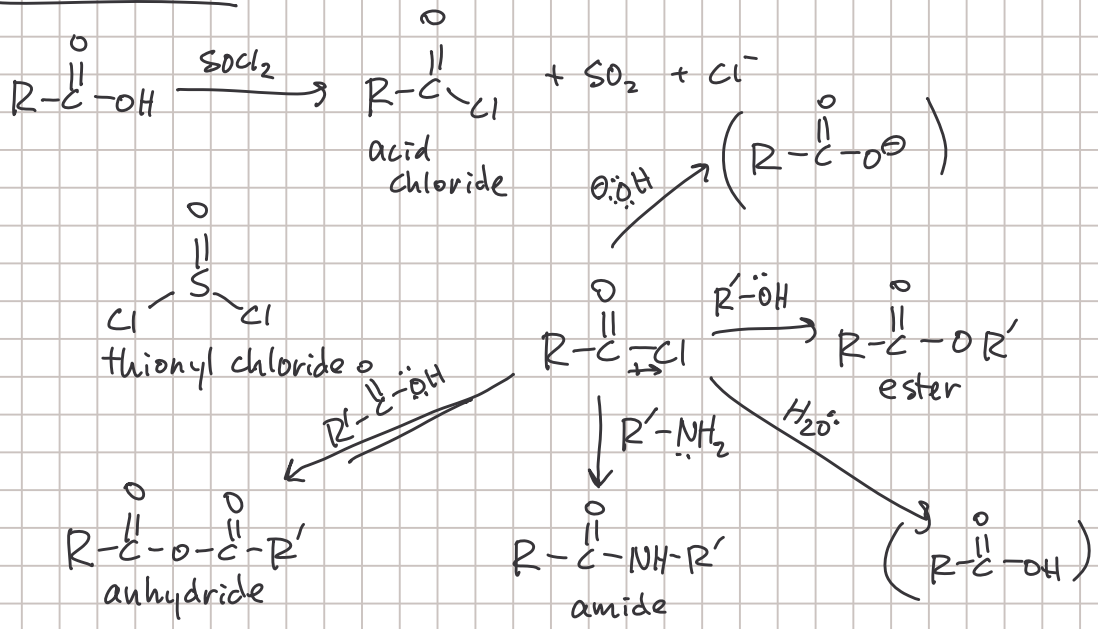


2) acid-cat dehydration →

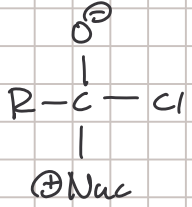


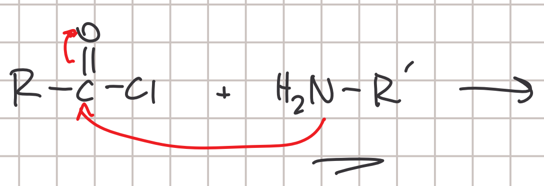
skip 20-11, 12, 13, 14

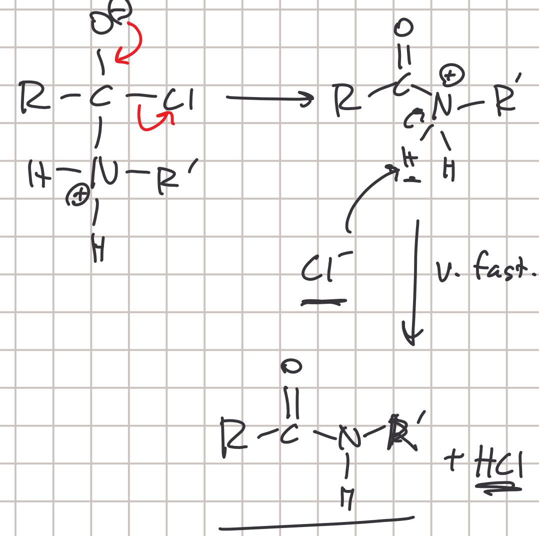
Acid chlorides



1) addition of nucleophile (strong or weak)
2) elimination of Cl^-
3) deprotonation







Weak base added sometimes to aid deprotonation (and remove HCl) (pyridine)