Today

Chap 17 Reactions at the α-C of a Carbonyl

Sections 17.2, 17.3: Keto-Enol Tautomerization

Section 17.1 The Acidity of α-Hs

Next Class

Alkylation of the α-C of a Carbonyl
Section 17.6, 17.7

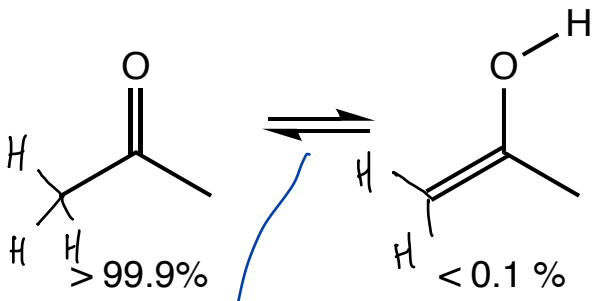
Second Class from Today

Benzene and Aromaticity 8.1, 8.2, 8.16 - 8.18

Third Class from Today

Electrophilic Aromatic Substitution
8.16 - 8.21, 18.1 -18.8

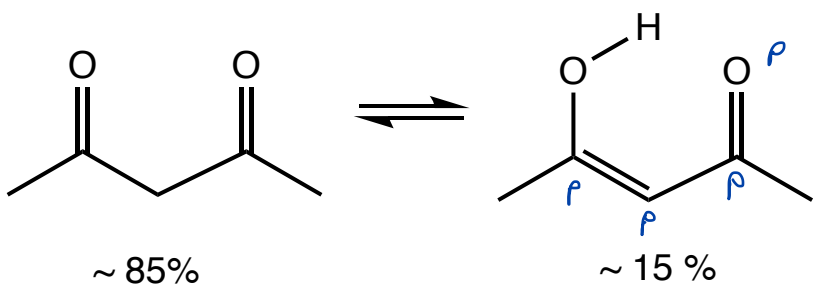
On a separate piece of paper rework test 2 and end in on Friday, April 14



carbonyl

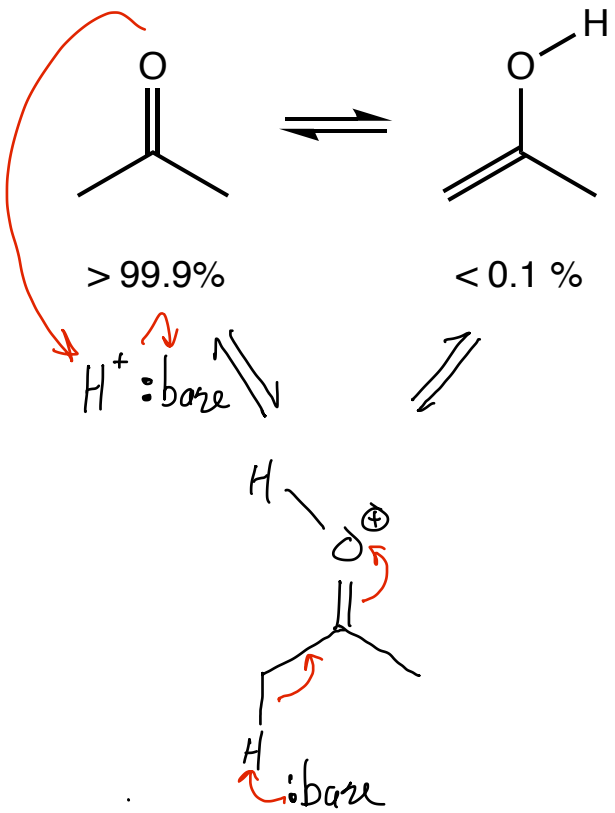
enol

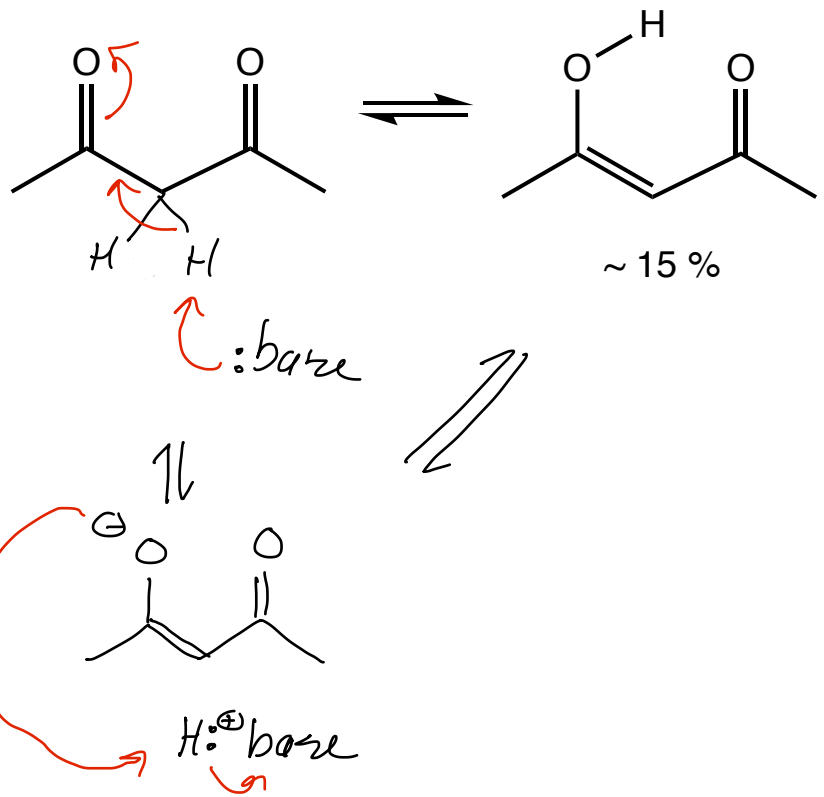
not resonance contributors... the structure has changed. There is a new O to H σ Bond



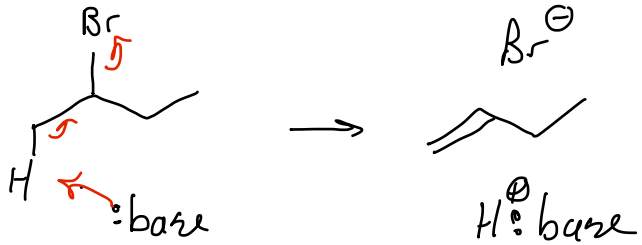
Typically, the C=O version is more stable. The stability of the enol form can be increased by e^- delocalization

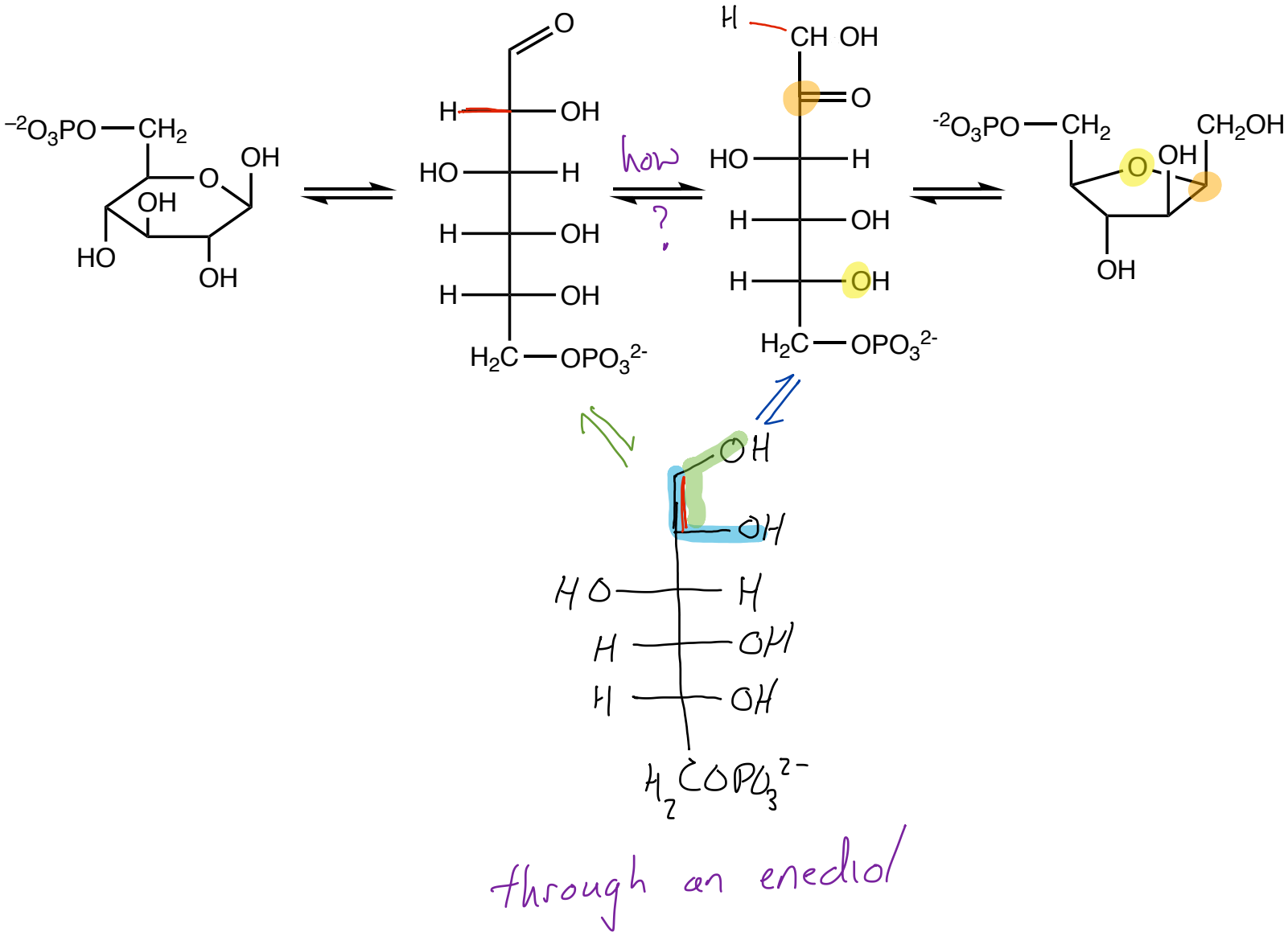
more enol form (as compared to acetone) because C=C π bond is part of an extended π system





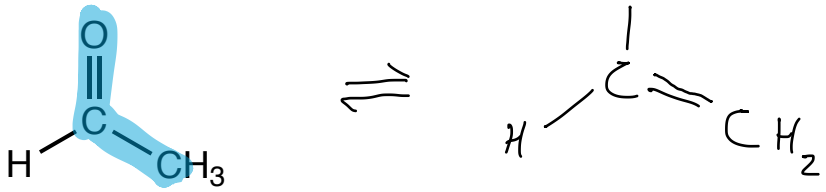
The C has been activated, but we haven't added a nucleophile ....




how
?
through an enediol

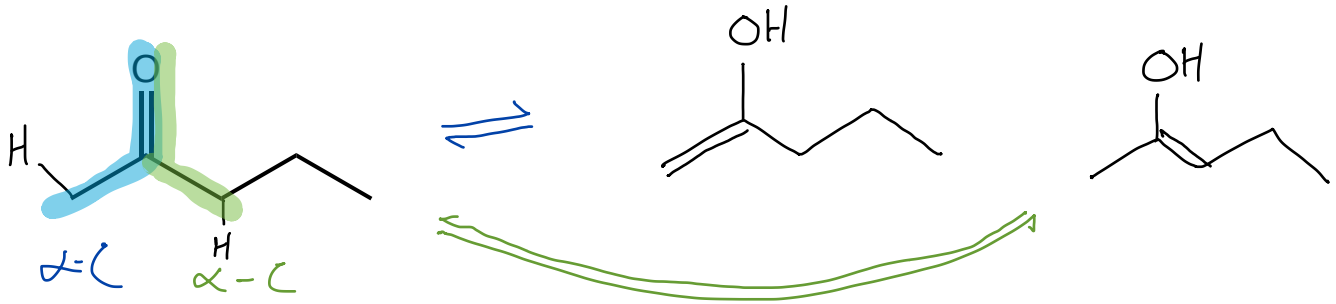
Keto-Enol Tautomerization: Draw Some Enols

Practice

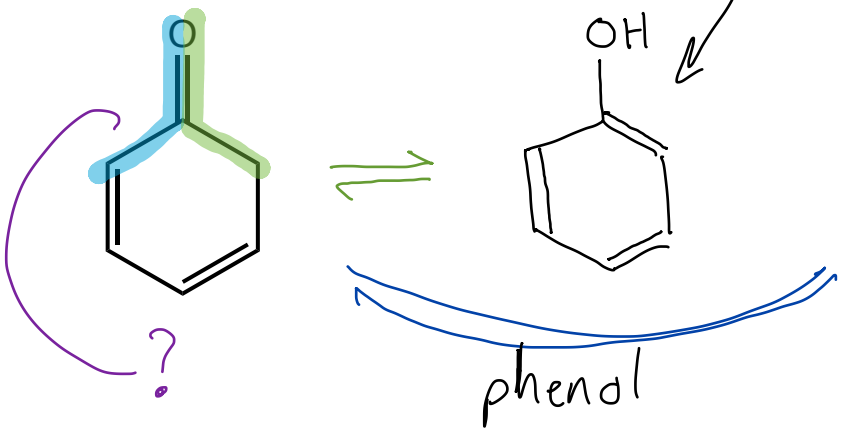


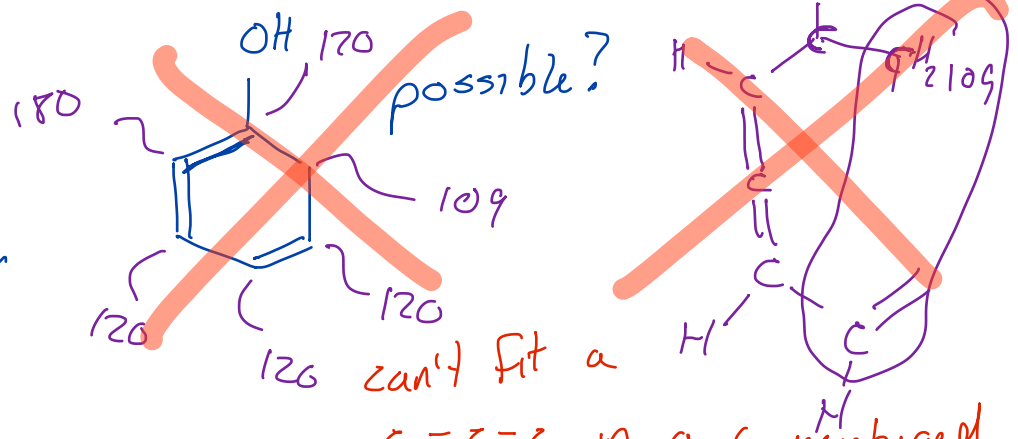
drawing the end version.

1. Find Carbonyl
2. Find α-C that has an H on it
3. Move that H to the O and draw C=O as –O–H
4. draw db from C=O C to α-C



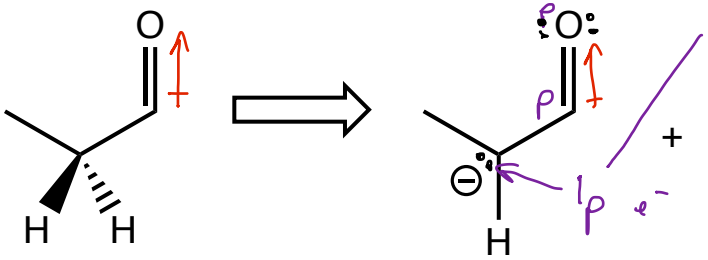
this is the more stable form



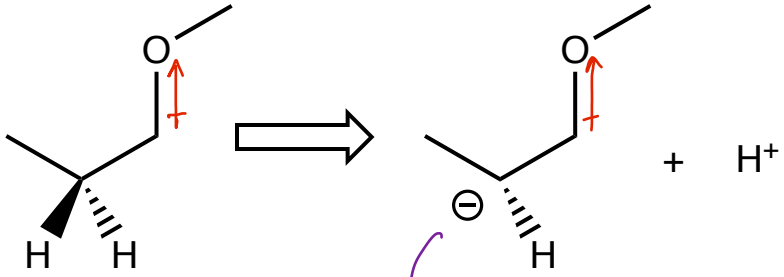


Isn't it hard to make carbanions?

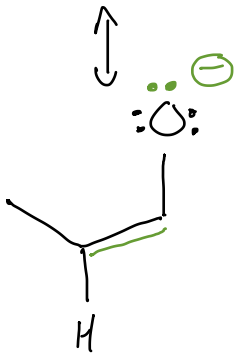
lone pair e⁻'s adjacent to π bond...



vs

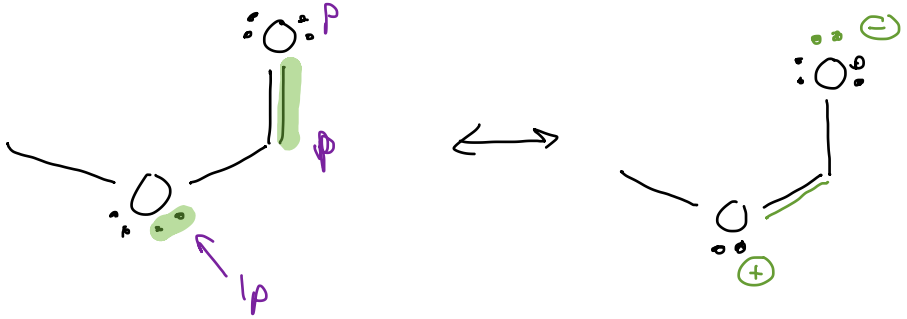


generate resonance contributor by switching position of lp e⁻'s + π bond



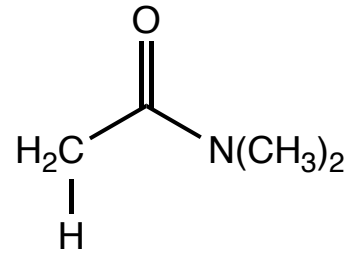
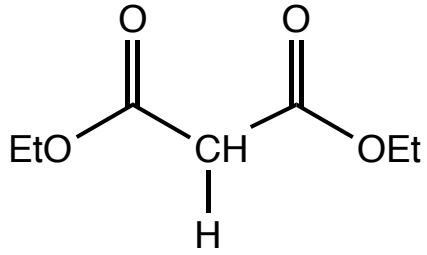
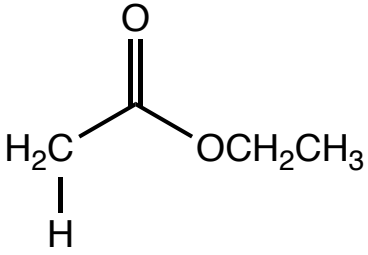
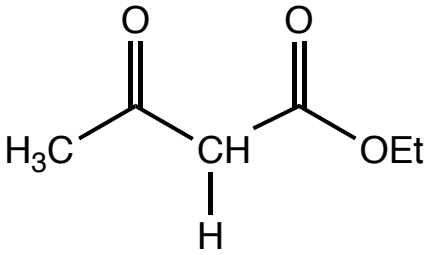
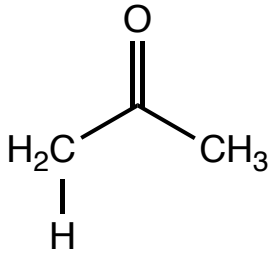
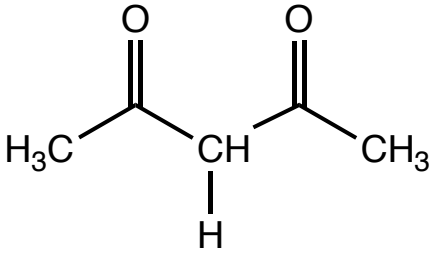
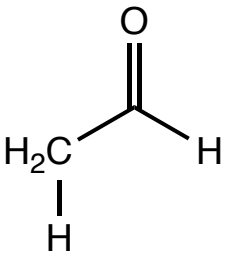
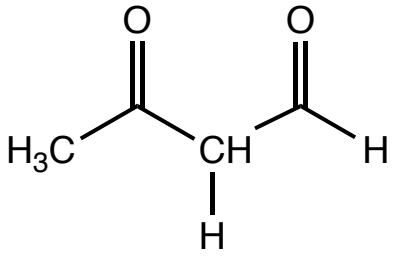
the ⊖ charge is spread out over the 2 + O by e⁻ delocalization much easier to do

negative charge confined to 2 atom.... hard to do



Acidic α-Hydrogens

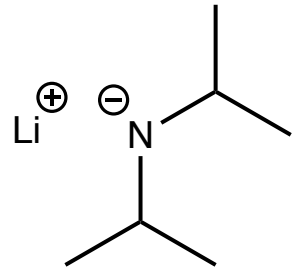
Section 17.1

	pK_a		pK_a
	30		13.3
	25		10.7
	20		8.9
	17		5.9

CH_3CH_2–H $pK_a = 50$

CH_3CH_2O–H $pK_a = 16$

$CH_3C(O)O$–H $pK_a = 4.75$



LDA
lithium diisopropylamide

pK_a $LDAH^+ = 35$