

Chem 30A- Week 6

Things to Remember

As acid strength goes up, pKa goes down

Stronger the acid, the weaker the conjugate base

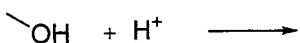
Trend for electronegativity vs. stability of conjugate base holds only for groups in the same row of the periodic chart.

Difference between homolytic and heterolytic cleavage (and the corresponding arrows)

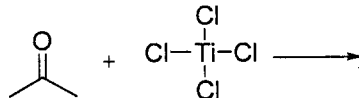
Warm-up Exercise

Identify the acids and bases in these reactions:

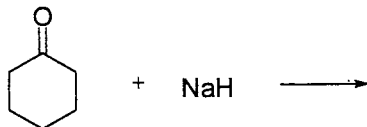
a.



b.



c.

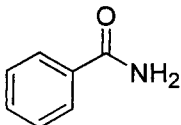
**Exercise**

1. Put in order of increasing acidity. Justify your answer. Circle acidic proton on each molecule (2 min).

a. Methanol, ethane, methylamine.

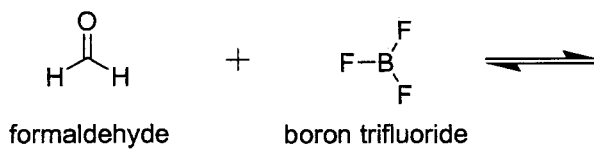
b. Methanol, t-butanol, isopropanol

2. Which is more basic the carbonyl or the amine moiety of benzamide (3 min)?

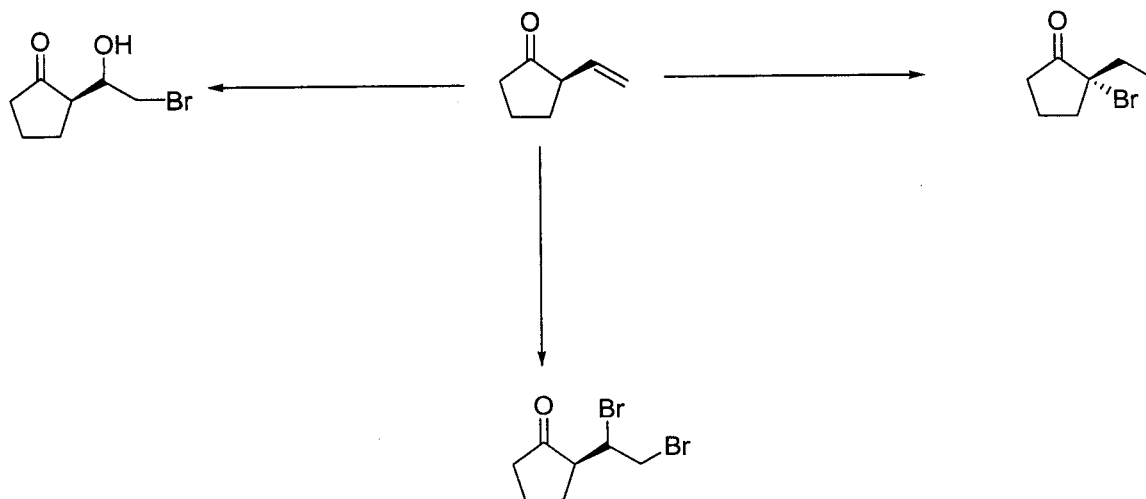


3. If you had never seen BF_3 before, how would you decide if it was a nucleophile or an electrophile (3 min)?

b. Formaldehyde and boron trifluoride form an acid-base complex- draw the complex.
Which is the acid, which is the base?



4. Fill in the reactants. Say whether or not the product will be racemic.



5. Given the following information, draw the energy profile of the described reaction. Is it kinetically or thermodynamically stable? (10 min.)

2-bromo propene when mixed with hydrochloric acid, gave the Markovnikov product with a ΔG^\ddagger of 60 kJ/mol and a ΔG of 42 kJ/mol.