

## Acid-Base

Some basic ideas:

Lowry-Bronsted Concept defines acid as a proton donor.

Lowry-Bronsted Concept defines base as a proton acceptor.

A strong acid dissociates readily to give  $H^+$ .

A weak acid does not dissociate readily to give  $H^+$ .

A strong base combines readily with a  $H^+$ .

A weak base does not combine readily with a  $H^+$ .

A conjugate acid-base pair is interconvertible into one another by losing or gaining a proton.

A conjugate acid that is strong must have a conjugate base that is weak. And vice versa.

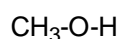
For example, if HA is a stronger acid than HB, then  $A^-$  is a weaker base than  $B^-$ .

Acid strengths can be measured by  $K_a$  or  $pK_a$ .

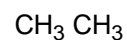
A strong acid has large  $K_a$  and small  $pK_a$ .

### Practice:

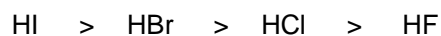
1. Write conjugate acid for each of the following:



2. Write conjugate base for each of the following:



3. The acid strength in decreasing order for HX is:



What is the base strength in decreasing order of their conjugate bases?

4. What are the products of the following acid-base reactions? Do you expect these reactions to proceed from reactants to products? Give reasons.

