

## Chapter 14 – Acids & Bases

- Know Arrhenius definition of acid/base
- Know Brønsted-Lowry definition of acid/base
- Know Lewis acid/base definition
  - o Acids – electron pair acceptor
  - o Bases – electron pair donor
- Acid-Base pairs – be able to identify acid and conjugate base or visa-versa
  - o This should be helpful in identifying acidic, basic, or neutral salts
    - Remember the stronger the acid, the weaker the conjugate base
  - o For conjugate pair:  $K_a \cdot K_b = K_w$
- Know strong and weak acids and bases!
  - o Remember when writing out the chemical equation of an acid in water; water is included
    - A base just dissociates – NO water in equation
  - o  $K_a$  &  $K_b$
  - o Use stoichiometry for strong acids or bases (i.e. don't need ICE table)
  - o MUST use ICE table for weak acids and bases → Remember to check assumption
- Disassociation of water (amphoteric) – know equilibrium expression
  - o  $K_w$  value given on equation sheet
  - o Also know  $\text{pH} + \text{pOH} = 14$
  - o Be able to use this information to solve problems
- $\text{pH}$ ,  $\text{pOH}$ , and  $\text{p}K_a = -\log( )$ 
  - o Know sig fig rule
- Percent dissociation – know equation and how to calculate
  - o What happens to % dissociation in dilute solutions?
- Polyprotic Acids
  - o What are they?
    - $K_{a1}$ ,  $K_{a2}$ , ...
    - Find  $\text{pH}$  – will need to do ICE tables!
- Acid Strength factors – Stronger the bond, weaker the acid
  - o More EN, stronger acid
- Weak Bases:
  - o  $\text{NH}_3$  or amines (derivatives of  $\text{NH}_3$ )
    - Remember we DO use water in the chemical equation with amines!
  - o ICE tables
- Salts:
  - o Cation comes from base
  - o Anion comes from acids
    - Conjugate pairs and strengths will allow you to ID as acidic, basic, or neutral salt
  - o Small highly charged cations → acidic salts
    - Percent ionization of percent hydrolysis