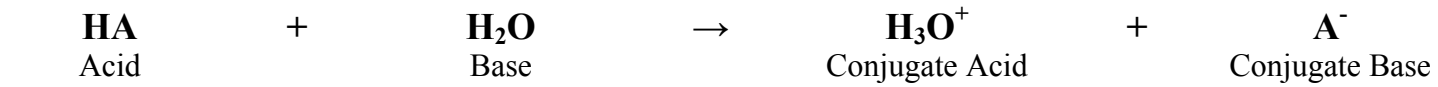
SUMMMARY

16.1 Acids and Bases

Theory	Acid	Base
• Arrhenius	Produces H^+ in solution	Produces OH^- in solution
• Bronsted – Lowry	H^+ donor	H^+ acceptor
• Lewis	Electron pair acceptor	Electron pair donor



16.2 Acid Strength

Strong Acids

- Completely dissociate (ionize)
- Have weak conjugate bases
- HCl, HBr, HI, H_2SO_4, HNO_3, $HClO_4$

Weak Acids

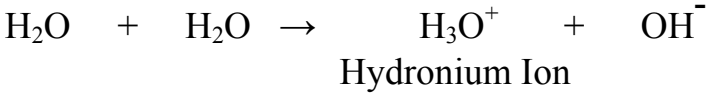
- Do not completely ionize
- Have a strong conjugate base
- CH3COOH

16.3 Water as an Acid and a Base

Amphoteric Substances

- Behave like acids and bases
- H_2O, NH_3, HSO_4^-

Ionization of Water



Ionization of Water simplified

At 25°C, $[H^+] = [OH^-] = 1.0 \times 10^{-7}$ moles / L

$[H^+] \times [OH^-] = 1.0 \times 10^{-14} = K_w$

In a neutral solution, $[H^+] = [OH^-]$
In an acidic solution, $[H^+] > [OH^-]$
In a basic solution, $[H^+] < [OH^-]$

16.4 The pH Scale

$pH = - \log [H^+]$

$pOH = - \log [OH^-]$

$pH + pOH = 14$