

Acids and Bases

I. Bronsted – Lowry theory

- conjugate acid – base pair
- strong vs. weak
- conjugate pair strengths

II. Self ionization of water

- ion – product constant, K_w

III. The pH scale

- pOH
- measuring pH
- calculating pH for strong acid/base solutions

IV. Acid – Base equilibria

- weak acid equilibria
 - acid ionization constant, K_a
 - extent of ionization
 - pH
- weak base equilibria
 - base ionization constant, K_b
 - pH

V. Polyprotic acids

VI. Molecular structure and acid strength

VII. Acid – base properties of salt solutions

- predicting
- hydrolysis of metal ions
- pH

VIII. Acid – base properties of oxides and hydroxides

- amphoteric oxides and hydroxides

IX. Lewis theory