

General Chemistry II
Topic: Concepts of Acidity and Basicity

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The student should be able to:

1. Define acids and bases in terms of the Arrhenius concept.
2. Define acids and bases in terms of the Bronsted-Lowry concept.
3. Recognize examples of Bronsted-Lowry acid-base reactions given a balanced neutralization equation.
4. Define acid/base conjugate pairs, and write the formula of a conjugate acid/base given the formula of a basic/acidic species.
5. Identify factors that influence acid strength, and, given a series of acids, arrange them in order of increasing/decreasing acidity.
6. Define acids and bases in terms of the Lewis concept.
7. Recognize examples of Lewis acid-base reactions given a balanced neutralization equation.
8. Define equivalent weights of acids and bases.
9. Determine the equivalent weight of an acid/base given its formula and a balanced neutralization equation.
10. Define Normality.
11. Solve problems related to acid-base titrations given volume, normality, and formula data.
12. Define pH and pOH.
13. Differentiate between strong and weak acids/bases.
14. Differentiate between ionization and dissociation.
15. Compute pH/pOH for strong acids/bases given concentration data.
16. Compute pH/pOH for weak acids/bases given concentration and ionization constant data.
17. Recognize examples of hydrolysis involving the salts of weak acids/bases.
18. Derive $K_{\text{hydrolysis}}$ from K_{w} and either K_{a} or K_{b} .
19. Determine the pH of aqueous solutions of salts derived from weak acids/bases.