

Unit 11 Acid Base Theory

1. What is the Arrhenius definition of an acid?
2. What is the Bronsted/Lowry definition of an acid? Of a base?
3. When a compound behaves as an acid, what does it become?
4. When a compound behaves as a base, what does it become?
5. For each of the following, label the acid, base, conjugate acid and conjugate base
 - a. $\text{HNO}_2 + \text{CN}^{-1} \rightarrow \text{NO}_2^{-1} + \text{HCN}$
 - b. $\text{HSO}_4^{-1} + \text{C}_2\text{O}_4^{-2} \rightarrow \text{SO}_4^{-2} + \text{HC}_2\text{O}_4^{-1}$
 - c. $\text{HBr} + \text{HNO}_3 \rightarrow \text{H}_2\text{Br}^{+1} + \text{NO}_3^{-1}$
6. Write the conjugate pairs in problem 5.
7. Provide the conjugate base for each of the following
 - a. H_2CO_3
 - b. HBr
 - c. HSO_4^{-1}
 - d. HPO_4^{-2}
 - e. NH_3
8. Provide the conjugate acid for each of the following
 - a. PO_3^{-3}
 - b. NO_3^{-1}
 - c. CO_3^{-2}
 - d. H_2O
 - e. NH_3