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Transparency Worksheet

Name _____

Acids and Bases

Class _____ Date _____

1. In the reactions of HCl with water and NH_3 with water, which reactant acts as an acid? Which reactant acts as a base? Explain your answers. _____

2. (a) On the submicroscopic level, explain how the hydronium ion is formed. _____

   (b) On the submicroscopic level, explain how the hydroxide ion is formed. _____

3. Compare the Brønsted definition of an acid and base with the Arrhenius definition. _____

4. Give an example of a Brønsted acid and a Brønsted base. _____

5. How does the hydrogen atom in HCl differ from a hydrogen atom in table sugar, $C_{12}H_{22}O_{11}$? _____

Critical Thinking

6. Write a chemical equation for the reactions of the following substances with water, identifying whether each substance acts as a Brønsted acid or a Brønsted base:

   (a) H_2SO_4 _____

   (b) H_2CO_3 _____

7. On the submicroscopic level, explain how water is amphiprotic. _____