**Basic Chem Review- Part 2** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ # \_\_\_\_\_\_

DIRECTIONS: Answer the questions below as completely and thoroughly, using complete sentences. You may use diagrams or pictures to supplement your answers, but a diagram or picture alone without appropriate explanation will lose points.

1. Define acid and base, including which has more hydronium/hydrogen and which has more hydroxide.
2. What is a buffer and why are they necessary in organisms?
3. Describe the relationship between the solute, the solvent, and a solution.
4. How does an ionic bond differ from a covalent bond?
5. What is a molecule? What kind of bonding must it have?
6. State the difference between endergonic and exergonic reactions.
7. Explain: Polar covalent bond. Draw an example, showing which side is more positive and which side is more negative.
8. What is the pH Scale, and what does its range of values mean? Include the range for an acid, a base and neutral, giving an example of each.
9. An oxygen atom has six electrons in its outermost energy level. Explain why two oxygen atoms must share four electrons when they form a covalent bond. You may diagram this on your paper to assist in your explanation. Is it polar or nonpolar?
10. Draw 3 water molecules and show the intermolecular hydrogen bonds between them with a dotted or dashed line.
11. Why can sugar dissolve in water? What must be the case if oil cannot dissolve in water?
12. Compare and contrast: Cohesion and Adhesion. Include an example of each.
13. In addition to #16, give at least 2 more characteristics of water. Explain why these are vital to life processes.