**Acid Rain Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Chemistry B Period\_\_\_\_\_**

1. In the following figure, all rainfall in the U.S. is below pH =7. However, acid rain is

considered to be less than pH= 5.6.

Explain.

Carbon dioxide has a concentration close to 385 ppm everywhere around the globe and dissolves

in water to produce carbonic acid (H2CO3). The pH of carbon dioxide dissolving is

approximately 5.6. Therefore, even “unpolluted” rain has an acidic pH of 5.6.



2. Assume that coal can be represented by the chemical formula C135H96O9NS

a. What is the % by mass of nitrogen in the coal? 0.7%

b. If 3 tons of coal were burned completely, what mass of NO would be produced? Assume all

nitrogen in coal is converted to NO.

c. Actually more NO than you calculated is produced. Explain.

3. The mass of CO2 emitted during combustion reactions is much greater than the mass of NOx

or SO2, but there is less concern about the contributions of CO2 to acid rain than the other two

oxides. Suggest two reasons for the apparent inconsistency.

**Acid Rain Control Strategies**

4. What reductions were called for by Acid Rain Program?

5. Have the goals for reductions been met?

6. What technology is used to accomplish these goals?

7. What is the difference in sulfur content found in coal in different locations in the U.S.?

8. What are advantages and disadvantages of burning coal from different regions?

9. What is the “cap and trade” system set up by the Clean Air Act Amendments?