1. In 3 sentences or less, explain the purpose of the lab.
The purpose of this lab is to determine the effects on the rate of reaction from changes in pH, temperature, and enzyme concentration. In determining these effects various lab techniques will also be learned including manipulation of an electronic gas pressure sensor.

2. State the hypothesis. Identify it as the hypothesis. You may use "If/Then" statements.
With increased enzyme concentration, the rate of reaction will increase in a linear fashion.
Catalase and peroxidase likely function best at the human body temperature therefore the rate of reaction at 30-35C will be the greatest, with a complete stop at 50-55C due to denaturation and a decreased rate of reaction at 20-25C and 0-5C because the enzyme was not made to function at those low temperatures.
Catalase and peroxidase likely function best at a pH of 7 (neutral) and will stop and denature at a pH of 4 and 10 because the H+ and OH- ions will disrupt the stability of the tertiary structure of the enzymes.

3. Briefly describe the experimental system you will use in this experiment.
Different environments will be created and imposed upon this reaction in a test tube by immersing the test tube in the mock environment in a beaker or directly adding a solution into the test tube. This setup is done to allow for measure the rate of reaction from a pressure sensor that will be added to a test tube (the system will also be closed). Since O2 gas is produced in this reaction the rate of reaction can be measured directly by the rate of O2 production and therefore the pressure in the test tube from O2.

4. Identify what is being measured.

Example: (O_2 production, H_2O movement, growth, production of a product; etc.)
The pressure O2 produced in the reaction is exerting on the manometer is being measured.

5. Explain how you will analyze the data—a graph? Calculate a slope for a rate?
A graph will be created to better visualize the effect of different environments on the rate of reaction. To determine the rate of reaction from the manometer data the slope of a tangent line would need to be taken. From this graph of the three possible conditions, pH, temperature, and enzyme concentration, the optimal conditions will be determined, as well as the worst conditions. This data will lead to a better understanding of catalase and peroxidase actual environment.