**Environmental Factors and Enzymes**
A group of students conducted three different experiments about the effect of environmental conditions on the effectiveness of enzyme activity. They have already observed that if they mix liver and hydrogen peroxide:

Liver + H2O2 🡪 Liver + Bubbles
However, the students wanted a more detailed explanation. So, their Biology teacher, Mrs. Tootles, told them that the bubbles were being produced by an enzyme named peroxidase. This enzyme is speeding up a chemical reaction happening in the liver cell. The peroxidase lock on to the H2O2 and break it down to H2O (water) and O2 (oxygen gas), which produces the bubbles they saw in the equation above.
**On the experiments below the dependent variable is the amount of pressure. The bubbles trapped in the test tube produce pressure, thusly, the amount of pressure directly relates to the amount of enzyme activity.** Below are the graphs the students made during their lab investigation.

**Student Graph #1:**

**Student Graph #2**

**Student Graph #3**

Analyze the graphs and answer the following questions:

1. How does changing the concentration affect the rate of enzymatic activity? Use evidence to support your answer.
2. Use your graph to extrapolate the rate of enzymatic activity to be if the concentration was increased to 10 drops? Explain your answer.
3. What temperature does enzyme activity perform the best at? What temperature(s) do enzymes perform the worst at? Why do you suppose this is happening?
4. At what pH does the enzyme perform the best at? What pH(s) do the enzymes perform the worst at? Why do you suppose this is happening?
5. Taking the information from the graphs, summarize the perfect conditions for an enzyme to function within.