Enzyme Graphing Worksheet

1. The enzyme would most likely affect reactions involving
   a. molecule A, only
   b. molecule C, only
   c. molecules B and D
   d. molecules A and C

2. Which graph, A or B, shows the amount of substrate going to zero faster?

3. If both graphs A and B show the rate of an enzyme, which enzyme is more effective? Justify your answer.

4. What variables affect enzyme activity in each of the graphs?
   a. ______________________________
   b. ______________________________
   c. ______________________________

5. What is the optimal condition for each enzyme represented by the graphs? The optimal condition is when the enzyme would work best.
   a. ______________________________
   b. ______________________________
   c. ______________________________

6. Explain what happens when hypothermia sets in (when enzymes get too cold!)

7. Does the same thing happen when enzymes get too hot? Why or why not?

8. Explain why graph C levels off. Use enzyme and substrate in your explanation. Why doesn't it matter if enzymes keep getting added?

9. What can affect the speed of an enzyme?
10. Describe the difference between the relationship between enzyme concentration and reaction rate.

11. Propose an explanation for this relationship.

12. What would cause the rate to level off?

13. What is the optimal pH for both enzymes?
   a. Pepsin _____________
   b. Trypsin _____________

14. Predict the reactivity of trypsin at pH 14.

15. When do neither enzyme work?

16. Compare the rate of the pepsin-catalyzed reaction at pH 3 with the rate of the trypsin-catalyzed reaction at pH 3.

17. At what pH values is pepsin likely to be denatured? When is the structure of pepsin changed? Justify your answer.

18. What can you infer about the pH of a stomach and an intestine? Justify your answer.