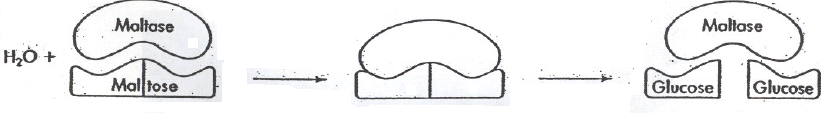
**Enzyme Practice Worksheet**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_**

**Directions:** *Examine the model of the enzyme reaction. Answer the questions that follow.*



1. What is the name of the enzyme shown in this model?
2. What is the name of the substrate shown?
3. Does the reaction represent dehydration synthesis or hydrolysis? Explain.
4. How are enzymes named?
5. To what class of biological compounds do enzymes belong?
6. Explain how enzymes affect activation energy and reaction temperature.
7. How does the modern induced fit model of enzyme-substrate interaction differ from the, Original lock-and-key hypothesis?

## Factors Affecting Enzyme Action

Enzymes work best under certain conditions. Using the data in the chart on the next page to plot a graph showing the rate of enzyme action for the enzymes Pepsin and Trypsin at different varying pH.

|  |  |  |
| --- | --- | --- |
| **pH** | **Rate of Enzyme**  **Action (for Pepsin)** | **Rate of Enzyme**  **Action (for Trypsin)** |
| 1 | 1 | 0 |
| 2 | 3 | 0 |
| 3 | 7 | 0 |
| 4 | 3 | 0 |
| 5 | 1 | 1 |
| 6 | 0 | 3 |
| 7 | 0 | 7 |
| 8 | 0 | 9 |
| 9 | 0 | 7 |
| 10 | 0 | 3 |
| 11 | 0 | 1 |
| 12 | 0 | 0 |
| 13 | 0 | 0 |
| 14 | 0 | 0 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

1. Considering the range of pH that it is most effective, where in the body might Pepsin be found?
2. At what pH is Trypsin most effective?
3. Temperature is also an important influence on enzyme action. At what temperature do you think most human enzymes work best?
4. Sketch a graph of what you think the rate of enzyme action would look like between 0 and 100oC.

Enzyme Rate

0 100

Temperature oC

1. Can you think of any part of the body where an enzyme might work at a slightly different temperature?