

**Biology 20 – ENZYMES Worksheet**

1. What is an enzyme?

2. **Match the following.** Each answer will only be used once.

- |                      |                                                                  |
|----------------------|------------------------------------------------------------------|
| a. ____ active site  | 1. a portion of an enzyme to which a substrate can attach        |
| b. ____ anabolism    | 2. the chemical on which the enzyme acts                         |
| c. ____ catabolism   | 3. the result of a chemical reaction                             |
| d. ____ catalyst     | 4. a molecule that prevents an enzyme from working               |
| e. ____ coenzyme     | 5. a molecule that makes the active site of an enzyme functional |
| f. ____ nonsubstrate | 6. the break-down of complex molecules into simple molecules     |
| g. ____ product      | 7. a reaction making simple molecules into complex molecules     |
| h. ____ protein      | 8. a molecule that speeds up chemical reactions                  |
| i. ____ substrate    | 9. all enzymes fit into this class of macromolecules             |

3. What is the optimum pH \_\_\_\_\_ and the optimum temperature \_\_\_\_\_ for enzymes in most locations of the human body?

4. At what temperature do enzymes begin to denature? \_\_\_\_\_

5. What is activation energy?

6. Circle the enzymes in the following list:

- |                    |               |
|--------------------|---------------|
| ATP                | phosphorylase |
| maltase            | sucrose       |
| actin              | insulin       |
| carbonic anhydrase | fructose      |

7. Identify two specific places in the cell where enzymes are located.

8. An enzyme called zymase is responsible for converting sugar into carbon dioxide and alcohol. As this conversion takes place, the reaction gradually slows down. Why?