**Enzymes Guided Notes**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are proteins that aid in biochemical reactions. Most chemical reactions require energy to begin. The energy required to start a chemical reaction is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.

2. Enzymes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which reduce the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ required for a chemical reaction to occur.

3. Enzymes are often referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because they speed up chemical reactions. The catalyst does not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during the reaction!

4. Enzymes have an area called an \_\_\_\_\_\_\_\_\_\_\_\_\_ site. The active site is where the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction occurs.

5. The active site of the enzyme fits with only one type of molecule known as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The fact that the active site can only accept \_\_\_\_\_\_\_\_ type of substrate is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ specificity.

6. Enzymes are affected by two main factors:

(1) \_\_\_\_\_\_\_\_\_\_\_\_

(2)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. Each enzyme functions best within a certain \_\_\_\_\_\_\_\_\_ range. For example, the enzyme \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which works in your stomach, functions best in a strongly \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ environment. When the pH changes, the active site \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ enzyme function.

8. Chemical reactions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ up as temperature is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, so, in general, reactions will increase at a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rate at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ temperatures. However, each enzyme has a temperature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and beyond this point the enzyme's \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shape is lost. Boiling temperatures will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ most enzymes.

9. Enzymes often end in the suffix \_\_\_\_\_\_\_\_\_\_\_. EX: Amylase - breaks down \_\_\_\_\_\_\_\_\_\_\_\_\_\_, Catalase – breaks down H2O2, DNA polymerase – joins DNA nucleotides to build DNA, Lipase – break apart \_\_\_\_\_\_\_\_, Lactase – breaks apart \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (milk sugar), Protease- breaks apart \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecules.