Name: Date: 10/31/14 Class:

**Due: Wednesday, Nov. 5/Thursday, Nov. 6**

**\*5 points in your academic grade**

Use the Ch. 3 Coursebook packet and your own knowledge of enzymes to complete this assignment.

1. **Complete the following paragraphs by filling in the missing words**

*Some of the words in this box may be useful:*

**Activation Denatured Enzyme Fibrous**

**Globular Indirect Induced fit Kinetic**

**Linear Lock and key Maximum rate Minimum rate**

**Narrow Potential Saturated Shape of the active site**

**Shape of the substrate Substrate Unsaturated Wide**

Enzymes are biological catalysts, reducing the energy of reactions. They are composed of proteins with a specific tertiary structure.

In the hypothesis, the substrate shape is complementary to the shape of the active site. In the hypothesis, the active site alters to fit the substrate.

Increasing temperature increases the energy of the enzyme and substrate molecules, with high temperature causing the enzyme to become irreversibly .

Enzymes operate in a pH range, with changing pH around the enzyme disrupting the .

Increasing enzyme concentration causes a increase in the rate of an enzyme-catalyzed reaction, whereas increasing substrate concentration also increases rate but only until a is reached where all active sites are .

1. **A) Draw a labelled sketch graph to show how temperature affects enzyme activity**

**B) Explain in your own words, with a scientific reason, why this curve shape is produced. [4]**

1. **A) Draw a labelled sketch graph to show how pH affects enzyme activity**

**B) Explain in your own words, with a scientific reason, why this curve shape is produced. [2]**

1. **A) Draw a labelled sketch graph to show how substrate concentration affects enzyme activity**

**B) Explain in your own words, with a scientific reason, why this curve shape is produced. [2]**

1. **A) Draw a labelled sketch graph to show how enzyme concentration affects rate of reaction.**

**B) Explain in your own words, with a scientific reason, why this curve shape is produced. [2]**