Keypoints Enzymes and Vitamins

Definitions

You will not be asked to write a definition of any of these but I do expect you to recognized them when they are used in problems, etc.

Activation

Acivation Energy

Acitive Site

Allosteric Activation

Allosteric Enzyme

Allosteric Inhibition

Catalyze/Catalyst

Coenzyme

Cofactor

Dietary Minerals

Enzyme

Feedback Inhibition

Inhibition

Substrate

Vitamin

Zymogen

Concepts

Be able to identify different types of intermolecular interactions that can help to hold a substrate in an enzyme active site, or which might facilitate enzyme catalysis.

Be able to look at an enzyme substrate and the reaction products and classify the enzyme when given a table similar to 19.2.

Recognize how enzyme catalyzed reaction are impacted by increasing the substrate concentration or the enzyme concentration. Be able to compare what is seen in these two cases.

Be able to describe how temperature can impact enzyme catalyzed reaction.

Be able to explain 2 ways that pH can influence the rate an enzyme catalyzed reaction.

When given a reaction path way and different types of activation and inhibition along that pathway identify the type activation or inhibition.

When given data showing the rate of a reaction as a function of inhibitor concentration be able to tell a competitive inhibitor from a non-competative inhibitor.

Be able to use your knowledge of acidic and basic side groups on amino acids to predict the state of these side groups at different pHs.

Be able to explain why sometimes a the primary protein structure of an enzyme is not synthesized (created) in the form in which it can be used.

Be able to explain what happens to zymogens in order to make them active enzymes.

Be able to describe how vitamins are recognized. (What is observed in order to people to realize that a chemical is a vitamin.)

Be able to tell the difference between water soluble and fat soluble vitamins when given their chemical structures.

Be able to explain why water soluble vitamins are not as commonly associated with illnesses that result from over consuming these vitamins.

Be able to explain why covalent modification of enzyme active sites can be fatal.