

Chapter 30 – Enzymes – Concepts

Focus on concepts and understanding. Rote memorization will get some points on an exam, but if you can't convey the concepts in meaningful way (sentences, diagrams, example) or interpret a given example you will struggle on the exam.

1. Enzyme Vocabulary

Apoenzyme	Holoenzyme
Coenzyme	Activator
4 Common Features	6 Classes of Enzymes

2. Energy Diagram

Activation Energy (AE)	Sketch Figure 30.3
Catalyzed Activation Energy (CAE)	
Transition State (TS)	Exothermic and Endothermic
Enthalpy of Reaction (ΔH)	3 Ways to Increase Reaction Rate

3. How Enzymes Function:

General Description	Active Site
Lock and Key Hypothesis	Dynamic Catalyst
Induced-Fit Model	Productive Binding
Proximity Catalysis	Stereospecific

4. Enzyme Regulation - General

Inhibitor/Activator	Irreversible vs Reversible
Competitive vs Noncompetitive	

5. Allosteric Regulation

Allosteric Regulation - Definition/Description	Sketch a Diagram illustrating the concepts
Regulator and Catalytic Subunit	
Cooperative Binding	

6. Covalent Modification

Definition	Phosphorylation
Cleavage	Example

7. Regulatory Schemes

Feedback Inhibition - Definition	Feed Forward Activation - Definition
Feedback Inhibition – Example/Illustration	Feed Forward Activation – Example/Illustration

8. Temperature and pH

Effect of Temperature on Enzyme Activity (Low and High)	Sketch/Graph
Effect of pH on Enzyme Activity (Low and High)	Sketch/Graph