Chap 8: Metabolism

Chap 8

Define and **Explain** the term *metabolism*.

Define *catabolic* and *anabolic*, then **Differentiate** between the two metabolic pathways.

State and **Explain** the two laws of thermodynamics.

Define the variables of the Gibbs free energy equation: $\Delta G = \Delta H - T\Delta S$

Explain why ΔG is the change in the energy state of a reaction: $\Delta G = G_{\text{final state}} - G_{\text{initial state}}$

Define and **Differentiate** between *endergonic reactions* and *exergonic reactions*.

Diagram the graphs associated with *endergonic reactions* and *exergonic reactions.*

Explain how *equilibrium* factors into chemical equations.

Diagram a molecule of ATP (at the atomic level), then **Explain** ATP's purpose in living systems.

Explain the process of *energy coupling*.

Define the term *catalyst*.

Explain why *enzymes* are considered catalysts.

Define the term *activation energy*.

Explain the three ways that an enzyme can speed up a reaction.

Diagram an enzyme activation energy graph and **Label** ΔG?

Define the terms: *protein/enzyme*, *substrate*, *active site*, and *inhibitor.*

Explain the concept of *induced fit*.

Define the term *cofactor*.

Define the term *coenzyme*.

Differentiate between *competitive inhibitors* and *noncompetitive inhibitors*.

Explain the process of *allosteric regulation*.

Explain the process of *feedback inhibition*.