**Chap 8: Metabolism**

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**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: G = H - TS

**Explain** why G is the change in the energy state of a reaction: G = G final state – G 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** G?

**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*.