**CHAPTER 8: CELLULAR ENERGY FINAL EXAM REVIEW 2012**

**\**ALL OF THE QUESTIIONS SHOULD BE ANSWERED AS A TYPE II.***

**CHAPTER 8**

1. Describe thermodynamics and the laws of thermodynamics BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: conservation, entropy, heat, created, destroyed, and energy
2. Compare and contrast autotrophs and heterotrophs. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: food, producers, consumers,
3. Explain what a metabolic pathway is and describe how photosynthesis and cellular respiration are metabolic pathways. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: anabolic, catabolic, substrate, product, energy, light, chemical, organic molecules.
4. What is ATP and how does it store and release energy. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: ADP, adenine base, ribose sugar, phosphate, release, store, bond, chemical, and nucleotide.

**Photosynthesis**

1. Explain the light dependent reactions of photosynthesis in detail. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: chloroplast, thylakoids, stroma, grana, chlorophyll, pigments, accessory pigments, photosystem I, photosystem II, water, oxygen, hydrogen ion (H+), electrons, NADP+, and NADPH.
2. Explain what is occurring during chemiosmosis. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: ATP synthetase, Hydrogen Ion, Stroma, thylakoid space, and electron transport.
3. Describe the light independent reactions in detail. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: Calvin cycle, Glucose, carbon dioxide, RuBP, 3, 6, 10, 12, PGA, PGAL/G3P, ATP, NADPH, and carbon fixation.
4. Compare and contrast C4 and CAM pathways. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: hot & dry, water, carbon dioxide, stomata, day, and night.

**Cellular Respiration**

1. Compare the chemical equation for Respiration to that of photosynthesis. BE SURE TO USE TO INCLUDE THE OVERALL REACTIONS.
2. Explain what occurs during glycolysis. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: cytoplasm, anaerobic, ATP, 2, 4, NADH, NAD+, Glucose, PGAL/G3P, Phosphate, electrons, hydrogen ions, ADP, and pyruvate..
3. Explain the formation of Acetyl CoA. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: pyruvate, 2, Acetate(acetyl), carbon dioxide, NADH, NAD+, Matrix of mitochondria, electrons, hydrogen ions, Coenzyme A, and acetyl CoA.
4. What is another name for Kreb’s cycle and what occurs during the cycle? BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: Acetyl CoA, citric acid, ATP, NADH, FADH2, NAD+, FAD+, 1, 2, 3, 4, 6, Matrix of mitochondria, oxaloacetate, carbon dioxide, ATP, ADP, phosphate, electrons, hydrogen ions, aerobic, and oxygen.
5. Explain the procedure of electron transport in terms of how ATP is produced. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: NADH, FADH2, NAD+, FAD+, Oxygen, water, electrons, hydrogen ions, matrix of mitochondria, inner membrane of mitochondria, inner membrane space, ATP Synthetase, chemiosmosis, 3, 2, 6, 10, 34, 38, glucose, ADP, and ATP.
6. Compare and contrast lactic acid fermentation and alcoholic fermentation. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: glycolysis, anaerobic, oxygen, pyruvate, NADH, NAD+, lactic acid, ethyl alcohol, electrons, protons, and ATP.