**Part 1:  The Light Reactions**

**Questions to answer:**

1. Explain the relationship between the light reactions and the Calvin cycle in photoautotrophs.
2. What is the function of the Magnesium atom in a chlorophyll molecule?
3. Where do replacement electrons come from in photosystem II?
4. Diagram the flow of an electron from photosystem II to eventually winding up in a molecule of NADPH.
5. Explain how ATP is produced in photosynthesis.
6. Why are plants green in color?
7. Compare and contrast cyclic and non-cyclic photophosphorylation.  Include the products of

each and the fates of those products.

1. Why is water necessary for photosynthesis?
2. Why is oxygen produced during the light reactions?

**Things You Should Make Sure You Understand:**

* The starting materials, end products and eventual fates of all of the molecules used and produced in the light reactions of photosynthesis.

**Part 2:  Calvin Cycle & Control**

**Questions to answer:**

* What happens during the Calvin cycle?  How does the Calvin cycle depend on the Light reactions?
* Explain the function of Ribulose BisPhosphate Carboxylase (aka Rubisco) in the Calvin Cycle.
* What is G3P?
* Looking at the net equation for photosynthesis of one molecule of glucose, what molecules are oxidized, and what molecules are reduced?
* Why do plants need to control the loss of water?  How is this done?
* Explain the phenomenon of photorespiration, why it is thought to occur (evolutionarily speaking), and why plants have evolved to minimize its occurrence.
* Why are C4 and CAM plants typically found in hot climates?

**Things You Should Make Sure You Understand:**

* The starting materials, end products and eventual fates of all of the molecules used and produced in the Calvin cycle of photosynthesis.
* The adaptations of C4 and CAM plant photosynthesis and how each is able to minimize photorespiration.