**Chapter 10 Reading Guide**

**-Photosynthesis-**

**Terms to Know:**

* Autotrophs Calvin Cycle/Light-Independent Reactions of Photosynthesis
* Heterotrophs NADP+/NADPH
* Chlorophyll Photophosphorylation
* Mesophyll Carbon Fixation
* Stomata ATP/ADP
* Stroma Wavelength
* Thylakoids Electromagnetic Spectrum
* Redox Reaction Photons
* Light Reactions of Photosynthesis Light Absorption
* Photosystem Linear Electron Flow
* Cyclic Electron Flow Concentration Gradient
* ATP Synthase Chemiosmosis
* C3 Plants C4 Plants
* CAM Plants Cytochrome Complex
* Granum

***Section 1***

1. In what plant tissue is chlorophyll found? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. How does carbon dioxide enter the leaf? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Sketch a drawing of the chloroplast, labeling the thylakoids, grana, stroma, inner and outer membranes.
4. Where is chlorophyll specifically found in the chloroplast? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Write the equation for photosynthesis. Is it endergonic or exergonic? How do you know?

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1. What are the two stages of photosynthesis?

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1. Name the reactants and products of the light reaction.

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1. Name the reactants and products of the dark reaction/Calvin cycle.

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1. When water is split, energy is released in the form of electrons. Name the main electron carrier that participates in photosynthesis. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Explain what is meant by the term carbon fixation.

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***Section 2***

1. What are the three main pigments found in photosynthesis?

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1. What happens to chlorophyll and other pigments when light is absorbed?

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1. What is a photosystem?

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1. Walk through the diagram of linear electron flow, putting in your own words, each of the 8 steps.
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1. In a broad overview, explain what happens in cyclic electron flow and how it is different from linear electron flow.

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***Section 3***

1. The Calvin Cycle occurs in three main phases. Identify and briefly explain what happens in each phase.
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1. What is G3P? In what other process that we have studied is it found in? What is it called in this process?

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