

## Photosynthesis Quiz #1

Name \_\_\_\_\_

Date \_\_\_\_\_

Period \_\_\_\_\_

1. Photosynthesis basics.

a. Write the overall equation for photosynthesis.

b. What is the overall purpose of photosynthesis?

2. Diagram the crosssection of a chloroplast and label all the structures (stroma, thylakoid, granum, thylakoid space, membranes, etc.). You might want to include a brief description of each structure in case your drawing is not good or the structures are hard to identify.

3. Light Reaction

a. Where in the chloroplast does the light reaction occur?

b. What two chemicals are produced as an immediate result of the light reaction (that are later used to drive the dark reaction)?

c. Where do the electrons that are used in Photosystem II come from?

4. Where in the chloroplast does the dark reaction occur?

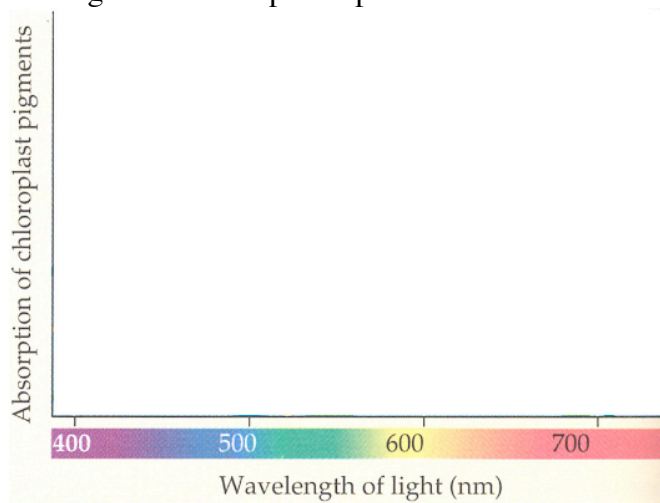
5. What is another name for the dark reaction?

6. Oxygen is produced in photosynthesis.

a. What molecule does it come from?

b. How are we certain what molecule oxygen comes from? Describe the experiment (briefly).

7. Diagram an absorption spectra for one of the chlorophyll molecules.



Explain how this absorption spectra explains the color of plants.

8. During the **Light Reaction**, in non-cyclic photophosphorylation, what happens between photosystem II and photosystem I?

9. What is the final electron acceptor at the end of photosystem I?

10. The **Light Reaction** can produce its energy rich molecules in two different ways: non-cyclic photophosphorylation and cyclic photophosphorylation. Describe two fundamental things that make cyclic photophosphorylation unique from non-cyclic photophosphorylation.