

CHAPTER 10.1—10.3: Photosynthesis Reactions

1. What role do autotrophs fill in the biosphere?

2. Indicate the role of each structure within the leaf:

a. stomates _____

b. thylakoid membranes _____

c. stroma _____

3. What is the source of oxygen released from photosynthesis?

4. In the overview of photosynthesis, indicate the most significant function of:

a. Light reaction _____

b. Calvin cycle _____

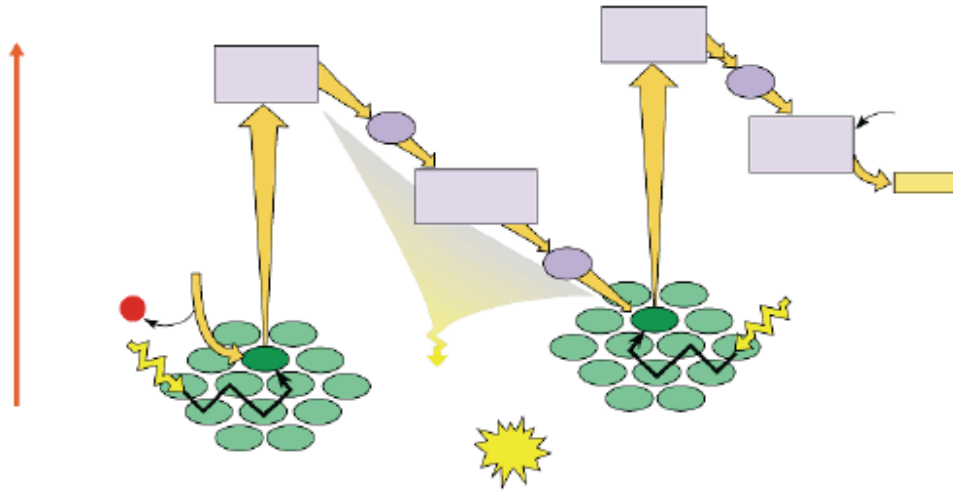
5. Light is a form of energy known as _____ and visible light has a wavelength range of _____ .

6. The porphyrin ring of chlorophyll contains the "metal" element _____

7. What does chlorophyll do when excited by photons? _____

8. In your own words, what is happening as electrons are excited by photons and move through the Photosystems.

(see Figure 10.8)



9. To generate ATP, chloroplasts rely on the ETC to _____
 and ATP is synthesized when: _____

10. Within the thylakoid membrane and stroma, indicate what happens to each of the following:

- a. water _____
- b. high energy electrons _____
- c. H⁺ _____
- d. oxygen _____
- e. NADP⁺ _____
- f. ADP _____

Name: _____

11. Where in the chloroplast is the H^+ concentration highest? _____

12. What happens during carbon fixation?

13. List the materials the plant uses during the Calvin cycle and the source of the materials.

14. The products of the Calvin cycle are:

15. How did they determine the eventual "products" of the "reactants" of oxygen gas and carbon dioxide in the Calvin Cycle?

16. What are the functions of the stomates?

Name: _____

Question Set 22-24

17. What do the guard cells do?

18. Why do high oxygen levels inhibit photosynthesis?

19. What happens during photorespiration and why is it considered bad for plants?
