Reading Guide Packet: Ch 9: Photosynthesis
Biology A

Name_____Period_____

Ch 9.1: Energy and Life

1. Draw a model of an *ATP* molecule. Label the 3 main components.

2. Why is *ATP* useful to cells?

3. How is *ATP* and *ADP* like a battery?

4. Name 3 ways that cells use ATP.

5. What is the difference between a *heterotroph* and an *autotroph*?

6. What happens in the process of *photosynthesis*?

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Ch 9.2: Photosynthesis: An Overview

7. What are *pigments*?

8. How do photosynthetic organisms use pigments?

9. What is the principle pigment of green plants?

10. Where is the pigment in question 9 found?

11. What is the *stroma*?

12. What are *electron carrier molecules?* Name the *electron carrier molecule* involved in photosynthesis.

13. Write the overall equation for photosynthesis in words and symbols.

14. Where do the *light-dependent reactions* take place?

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15. Draw a diagram of the stages of photosynthesis. Be sure to label the parts of the chloroplast, and indicate where the reactants and products are entering and leaving the various structures.

16. What are the reactants and products of the *light-dependent reactions?*

17. Where do the *light-independent reactions* take place?

18. What are the reactants and products of the *light-independent reactions*?

Ch 9.3: The Process of Photosynthesis

19. What are *photosystems*?

20. What is the function of an *electron transport chain*?

21. What happens to electrons as they move along the *electron transport chain*?

22. When electrons pass through Photosystem I, in what molecule do they ultimately end up?

23. ATP is produced in the *light-dependent reactions* as hydrogen ions move from high to low concentration across a membrane-spanning protein with what name?

24. The movement of hydrogen ions as described in question 23 is an example of what kind of transport?

25. What happens during the *light-independent reactions*?

26. What are the most important factors that affect the rate of *photosynthesis*?

27. What are the distinguishing characteristics of *C4 Plants* and *CAM Plants*?