

Chapter 8 Photosynthesis**Chapter Test B****Multiple Choice**

Write the letter that best answers the question or completes the statement on the line provided.

- ____ 1. Organisms, such as plants, that make their own food are called
 a. autotrophs. c. thylakoids.
 b. heterotrophs. d. pigments.
- ____ 2. Organisms that cannot make their own food and must obtain energy from the foods they eat are called
 a. autotrophs. c. thylakoids.
 b. heterotrophs. d. plants.
- ____ 3. Which of the following is NOT a part of an ATP molecule?
 a. adenine c. chlorophyll
 b. ribose d. phosphate
- ____ 4. In Figure 8-1, between which parts of the molecule must the bonds be broken to form an ADP molecule?
 a. A and B
 b. B and C
 c. C and D
 d. all of the above
- ____ 5. Jan van Helmont concluded that plants gain most of their mass from
 a. water.
 b. the soil.
 c. carbon dioxide in the air.
 d. oxygen in the air.
- ____ 6. Ingenhousz showed that plants produce oxygen bubbles when exposed to
 a. ATP. c. light.
 b. carbon dioxide. d. a burning candle.
- ____ 7. Photosynthesis uses sunlight to convert water and carbon dioxide into
 a. oxygen. c. ATP and oxygen.
 b. high-energy sugars. d. oxygen and high-energy sugars.
- ____ 8. Plants gather the sun's energy with light-absorbing molecules called
 a. pigments. c. chloroplasts.
 b. thylakoids. d. glucose.

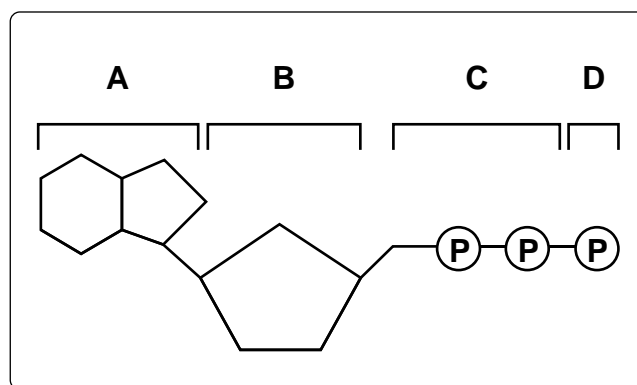


Figure 8-1

- ____ 9. Plants take in the sun's energy by absorbing
- a. high-energy sugars.
 - b. chlorophyll *a*.
 - c. chlorophyll *b*.
 - d. sunlight.
- ____ 10. The stroma is the space that surrounds
- a. thylakoids.
 - b. chloroplasts.
 - c. plant cells.
 - d. all of the above
- ____ 11. Where do the light-dependent reactions take place?
- a. in the stroma
 - b. outside the chloroplasts
 - c. in the thylakoid membranes
 - d. only in chlorophyll molecules
- ____ 12. Where are photosystems I and II found?
- a. in the stroma
 - b. in the thylakoid membrane
 - c. in the Calvin cycle
 - d. all of the above
- ____ 13. The Calvin cycle is another name for
- a. light-independent reactions.
 - b. light-dependent reactions.
 - c. photosynthesis.
 - d. all of the above
- ____ 14. What is a product of the Calvin cycle?
- a. oxygen gas
 - b. ATP
 - c. high-energy sugars
 - d. carbon dioxide
- ____ 15. Which of the following affects the rate of photosynthesis?
- a. water
 - b. temperature
 - c. light intensity
 - d. all of the above

Completion

Complete each statement on the line provided.

16. Organisms, such as hawks and leopards, that obtain energy from the foods they consume are called _____ .
17. Ingenhousz found that plants produce oxygen bubbles only in the presence of _____ .
18. Photosynthesis uses the energy of sunlight to convert water and carbon dioxide into oxygen and _____ .

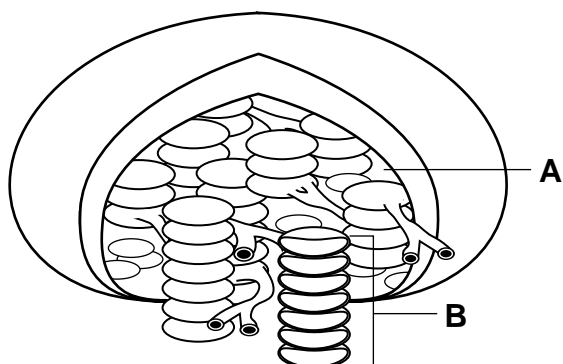


Figure 8-2

19. The area indicated in Figure 8-2 by the letter A is called _____ .
20. The light-dependent reactions convert NADP^+ and ADP into the energy carriers NADPH and _____ .

Short Answer

In complete sentences, write the answers to the questions on the lines provided.

21. What is the difference between an autotroph and a heterotroph?
Give an example of each type of organism.

22. Explain how heterotrophs get their energy from the sun even though they cannot make their own food.

23. What happens when a phosphate group is removed from an ATP molecule?

24. Identify the structures labeled B in Figure 8-2. What is their function?

25. List two factors that affect the rate of photosynthesis.

Using Science Skills

Use the diagram below to answer the following questions on the lines provided.

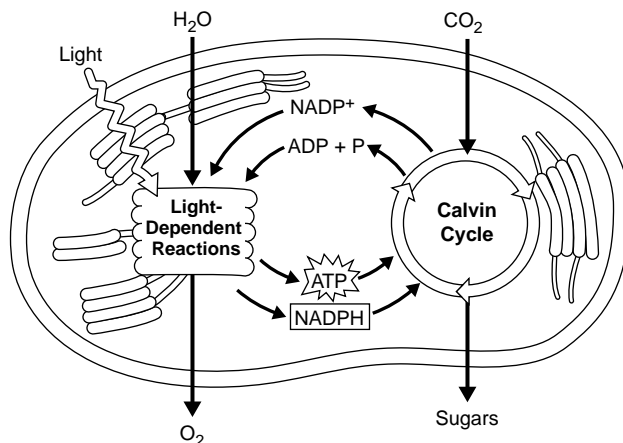


Figure 8-3

26. **Interpreting Graphics** What process is shown in Figure 8-3?

27. **Interpreting Graphics** What structure is shown in Figure 8-3?

28. **Interpreting Graphics** Look at Figure 8-3. What are the products of the light-dependent reactions?

29. **Interpreting Graphics** What are the products of the Calvin cycle shown in Figure 8-3?

30. **Interpreting Graphics** In Figure 8-3, what chemical from the atmosphere is used in the Calvin cycle to produce sugars?
