1. What is the primary product of photosynthesis that stores chemical energy?

A. Glucose
B. Oxygen
C. Water
D. Chlorophyll

2. Which of the following organisms does NOT perform photosynthesis?

A. Green plants
B. Algae
C. Mushrooms
D. Some bacteria

3. Where does photosynthesis primarily occur in plant cells?

A. Mitochondria
B. Chloroplasts
C. Nucleus
D. Cell membrane

4. What pigment in chloroplasts absorbs sunlight for photosynthesis?

A. Carotene
B. Chlorophyll
C. Xanthophyll
D. Melanin

5. Which stage of photosynthesis produces ATP and NADPH?

A. Calvin cycle
B. Light-independent reactions
C. Light-dependent reactions
D. Respiration

6. What is released as a byproduct when water molecules are split during photosynthesis?

A. Carbon dioxide
B. Oxygen
C. Glucose
D. Chlorophyll

7. In the Calvin cycle, what molecule from the atmosphere is used to synthesize glucose?

A. Nitrogen
B. Oxygen
C. Carbon dioxide
D. Water

8. What is the stored form of glucose in plants?

A. Cellulose
B. Starch
C. Lipids
D. Proteins

9. Which factor does NOT directly affect the rate of photosynthesis?

A. Light intensity
B. Carbon dioxide concentration
C. Humidity
D. Temperature

10. What is the role of ATP and NADPH in photosynthesis?

A. They are pigments that absorb light
B. They provide energy for the Calvin cycle
C. They directly split water molecules
D. They store carbon dioxide

11. Which of the following organisms can perform photosynthesis?

A. Green plants
B. Algae
C. Some bacteria
D. All of the above

12. Where does photosynthesis primarily occur in plant cells?

A. Mitochondria
B. Chloroplasts
C. Nucleus
D. Cell membrane

13. What is the green pigment responsible for absorbing sunlight in photosynthesis?

A. Carotenoid
B. Chlorophyll
C. Xanthophyll
D. Melanin

14. What are the two main stages of photosynthesis?

A. Oxidation and reduction
B. Light-dependent reactions and Calvin cycle
C. Glycolysis and Krebs cycle
D. Respiration and fermentation

15. What is a byproduct of the light-dependent reactions in photosynthesis?

A. Glucose
B. Oxygen
C. Carbon dioxide
D. Starch

16. Which molecules are produced during the light-dependent reactions to power the Calvin cycle?

A. ADP and NADP+
B. ATP and NADPH
C. Glucose and starch
D. Water and carbon dioxide

17. What is the primary input used in the Calvin cycle?

A. Sunlight
B. Water
C. Carbon dioxide
D. Oxygen

18. What can glucose produced in photosynthesis be used for?

A. Immediate energy or stored as starch
B. Only for immediate energy
C. Only for storage as starch
D. None of the above

19. Which of the following is NOT a factor affecting photosynthesis?

A. Light intensity
B. Carbon dioxide concentration
C. Humidity
D. Temperature

20. Why is photosynthesis essential for life on Earth?

A. It produces oxygen and food for other living organisms
B. It converts chemical energy into light energy
C. It only benefits plants
D. It removes all carbon dioxide from the atmosphere

21. What is the primary product of photosynthesis that stores chemical energy?

A. Oxygen
B. Glucose
C. Water
D. Chlorophyll

22. Which of the following is NOT a component that performs photosynthesis?

A. Green plants
B. Algae
C. Fungi
D. Some bacteria

23. Where does photosynthesis primarily occur in plant cells?

A. Mitochondria
B. Chloroplasts
C. Nucleus
D. Cell membrane

24. What pigment in chloroplasts absorbs sunlight for photosynthesis?

A. Carotene
B. Chlorophyll
C. Xanthophyll
D. Melanin

25. Which stage of photosynthesis produces ATP and NADPH?

A. Calvin cycle
B. Light-independent reactions
C. Light-dependent reactions
D. Respiration

26. What is released as a byproduct when water molecules are split during photosynthesis?

A. Carbon dioxide
B. Oxygen
C. Glucose
D. Nutrients

27. What molecule is used in the Calvin cycle to synthesize glucose?

A. Water
B. Carbon dioxide
C. Chlorophyll
D. Sunlight

28. What is the stored form of glucose in plants?

A. Cellulose
B. Starch
C. Lipids
D. Proteins

29. Which of the following is NOT a factor affecting photosynthesis?

A. Light intensity
B. Oxygen concentration
C. Temperature
D. Availability of water

30. What is the purpose of optimal conditions in photosynthesis?

A. To reduce the plant's energy consumption
B. To minimize the production of glucose
C. To allow plants to perform photosynthesis efficiently
D. To prevent the absorption of sunlight

31. What is the primary function of photosynthesis?

A. Convert light energy into chemical energy stored in glucose
B. Break down glucose to release oxygen
C. Absorb carbon dioxide to produce water
D. Store energy in ATP without sunlight

32. Which of the following is NOT a participant in photosynthesis?

A. Green plants
B. Algae
C. Fungi
D. Some bacteria

33. Where does photosynthesis primarily occur in plant cells?

A. Mitochondria
B. Chloroplasts
C. Nucleus
D. Cell membrane

34. What pigment in chloroplasts absorbs sunlight for photosynthesis?

A. Carotene
B. Chlorophyll
C. Melanin
D. Hemoglobin

35. What are the two main stages of photosynthesis?

A. Glycolysis and Krebs cycle
B. Light-dependent reactions and Calvin cycle
C. Nitrogen fixation and respiration
D. Fermentation and chemosynthesis

36. What is a byproduct of the light-dependent reactions?

A. Glucose
B. Oxygen
C. Starch
D. Carbon dioxide

37. What molecules are produced during the light-dependent reactions?

A. ATP and NADPH
B. Glucose and starch
C. Lactic acid and ethanol
D. Water and carbon dioxide

38. What is used in the Calvin cycle to synthesize glucose?

A. Sunlight and water
B. ATP, NADPH, and carbon dioxide
C. Oxygen and glucose
D. Chlorophyll and starch

39. What can the glucose produced in photosynthesis be used for?

A. Only immediate energy
B. Only stored as starch
C. Immediate energy or stored as starch
D. Producing oxygen only

40. Which of the following is NOT a factor affecting photosynthesis?

A. Light intensity
B. Carbon dioxide concentration
C. Gravity
D. Temperature

41. What is the primary product of photosynthesis that stores chemical energy?

A. Glucose
B. Oxygen
C. Chlorophyll
D. ATP

42. Which of the following is NOT a key component involved in photosynthesis?

A. Chloroplasts
B. Mitochondria
C. Chlorophyll
D. Light energy

43. Where does the light-dependent reaction of photosynthesis primarily occur?

A. Chloroplasts
B. Mitochondria
C. Cell membrane
D. Nucleus

44. What is the byproduct released during the light-dependent reactions?

A. Oxygen
B. Carbon dioxide
C. Water
D. Glucose

45. Which molecule absorbs sunlight to power photosynthesis?

A. Chlorophyll
B. ATP
C. NADPH
D. Starch

46. What is the other name for the light-independent reactions in photosynthesis?

A. Calvin cycle
B. Krebs cycle
C. Glycolysis
D. Electron transport chain

47. Which of the following is NOT a factor affecting photosynthesis?

A. Light intensity
B. Oxygen concentration
C. Temperature
D. Carbon dioxide concentration

48. During the Calvin cycle, what is used to synthesize glucose?

A. ATP, NADPH, and carbon dioxide
B. Sunlight and water
C. Oxygen and chlorophyll
D. Glucose and starch

49. What can glucose produced in photosynthesis be used for?

A. Immediate energy or stored as starch
B. Only for immediate energy
C. Only for storing as starch
D. Releasing oxygen

50. Which pigment is primarily responsible for capturing light energy in photosynthesis?

A. Chlorophyll
B. Carotenoids
C. Xanthophyll
D. Phycocyanin