Quiz: Photosynthesis

Read each question. Circle the letter of the correct answer.

1. The light-independent reactions of photosynthesis need _____.

A. water

B. oxygen

C. cellulose

D. carbon dioxide

2. The function of the light-dependent reactions is to _____.

A. build sugars

B. form water molecules

C. release carbon dioxide

D. capture and transfer energy

3. Which of these is the site of the photosystems in the light-dependent reactions of photosynthesis?

A. stroma

B. ATP synthase

C. thylakoid membrane

D. mitochondrial matrix

4. Which of these are products of the light-dependent reactions of photosynthesis that are required by the light-independent reactions?

A. oxygen and ATP

B. ATP and NADPH

C. water and oxygen

D. oxygen and NADPH

5. Which of these is not true regarding the dark reactions of photosynthesis?

A. generate sugars

B. do not require light

C. require ATP and NADPH

D. use water as an electron source

6. Which chemical equation best represents the process of photosynthesis?

A. $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$

B. $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$

C. $C_6H_{12}O_6 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$

D. $6CO_2 + O_2 \rightarrow C_6H_{12}O_6 + 6O_2 + H_2O$

7. Which process would bacteria living near a heat vent on the ocean floor use to build carbon-based molecules, such as sugars?

A. fermentation

B. chemosynthesis

C. cellular respiration

D. light-independent reactions

8. NADPH is important in photosynthesis because it _____.

A. becomes oxidized to form NADP

B. is needed to form chlorophyll and carotenoids

C. provides high-energy electrons used to store energy in organic molecules

D. provides additional oxygen atoms from the breakdown of water molecules

9. Which of these statements best describes the process of photosynthesis?

A. Plants use oxygen to make simple sugars.

B. Chlorophyll builds sugars in the thylakoid membrane.

C. Chloroplasts absorb sunlight and store chemical energy.

D. Light breaks down water molecules and releases carbon dioxide.

10. What is the relationship between the photosystems and the Calvin cycle?

A. The photosystems produce ATP synthase for the Calvin cycle.

B. The photosystems transfer energy to the Calvin cycle through ATP and NADPH.

C. The photosystems transfer hydrogen ions and carbon dioxide to the Calvin cycle.

D. The photosystems build sugars with the carbon dioxide produced by the Calvin cycle.

Read each statement. Write your answer on the lines.

11. Why do the cells of plant roots generally lack chloroplasts?

12. What is the source of the oxygen that plants add to the atmosphere?

13. What are the two reactants and two products for the process of photosynthesis?

14. Explain the importance of producers and photosynthesis for all life on Earth.

15. The diagram illustrates a process.

What process does the diagram illustrate? How do you know?