

1. In photosynthesis, chlorophyll functions in changing
 - (1) glucose molecules to starch
 - (2) water and carbon dioxide to sugar
 - (3) light energy to chemical bond energy**
 - (4) hydrogen bonds to water
2. Over a 24-hour period, which factor would have the *least* effect upon the rate of photosynthesis in a geranium plant?
 - (1) concentration of carbon dioxide in the air
 - (2) quantity of nitrates in the soil**
 - (3) wavelengths of light
 - (4) availability of water in the soil
3. The basic inorganic materials used during photosynthesis are
 - (1) H₂O AND C₆H₁₂O₆ **(3) H₂O and CO₂**
 - (2) O₂ and CO₂ (4) C₆H₁₂O₆ and CO₂
4. In the photosynthetic reaction, which event normally occurs before the other three?
 - (1) oxygen release (3) PGAL synthesis
 - (2) water absorption** (4) glucose formation
5. By which process are CO₂ and H₂O converted to carbohydrates?
 - (1) transpiration (3) fermentation
 - (2) respiration **(4) photosynthesis**
6. At optimum light intensity, which atmospheric gas most directly influences the rate of photosynthesis?
 - (1) nitrogen **(3) carbon dioxide**
 - (2) oxygen (4) hydrogen
7. PGAL is synthesized during
 - (1) Anaerobic respiration
 - (2) Aerobic respiration
 - (3) Photochemical reactions of photosynthesis
 - (4) Carbon-fixation reactions of photosynthesis**
8. Most of the oxygen in the atmosphere results from the process of
 - (1) fermentation (3) regulation
 - (2) photosynthesis** (4) respiration
9. Through the use of the isotope oxygen-18, scientists have demonstrated that the oxygen released during photosynthesis comes from
 - (1) both carbon dioxide and water molecules
 - (2) the splitting of water molecules**
 - (3) the breakdown of chlorophyll
 - (4) PGAL in the dark reaction
10. Hydrogen atoms and carbon dioxide molecules participate in a series of chemical changes that produce a three-carbon sugar in photosynthesis. These chemical changes are part of
 - (1) the photochemical reactions, only
 - (2) the carbon-fixation reactions, only**
 - (3) both the photochemical and the carbon fixation reactions
 - (4) neither the photochemical nor the carbon fixation reactions
11. Photosynthesis transforms molecules of water and carbon dioxide into molecules of
 - (1) carbohydrate and oxygen**
 - (2) carbohydrate and nitrogen
 - (3) polypeptide and oxygen
 - (4) polypeptide and nitrogen
12. Green plants usually do *not* excrete large amounts of CO₂ because they use CO₂ in the process of
 - (1) photosynthesis** (3) anaerobic respiration
 - (2) hydrolysis (4) transpiration
13. The basic raw materials for photosynthesis are
 - (1) water and carbon dioxide**
 - (2) oxygen and water
 - (3) sugar and carbon dioxide
 - (4) water and oxygen
14. Which substances must a green plant obtain from its environment to carry on photosynthesis?
 - (1) glucose and water
 - (2) oxygen and chlorophyll
 - (3) carbon dioxide and water**
 - (4) carbon dioxide and oxygen