CHAPTER 8.2 Practice Answer KEY

Chlorophyll and Chloroplasts

For Questions 1–6, complete each statement by writing the correct word or words.

1. The wavelength _____ of light determines its color.
2. Chemicals that absorb light are called Pigments.
3. Chlorophyll makes plants look green because it Reflects green light.
4. Chloroplasts contain an abundance of saclike photosynthetic membranes called thylakoids_____.
5. The stroma is the fluid portion of the chloroplast located outside the thylakoids.
6. The visible light absorbed by chlorophyll increases the energy level of the chlorophyll’s electrons.

High-Energy Electrons

For Questions 8–9, refer to the Visual Analogy comparing electron carriers to oven mitts.

8. **VISUAL ANALOG** In the visual analogy of carrying electrons, what represents the high-energy electrons?
   - Hot potato/cookie (heat, steam)

10. Where do the high-energy electrons carried by NADPH come from?
    - Water molecules are split into O2, H+, and high energy electrons

An Overview of Photosynthesis

For Questions 11–13, write the letter of the correct answer on the line at the left.

11. What are the reactants of the photosynthesis reaction?
    - A. chlorophyll and light
    - B. carbon dioxide and water
    - C. carbohydrates and oxygen
    - D. high-energy electrons and air

12. What are the products of the light-dependent reactions?
    - A. chloroplasts and light
    - B. proteins and lipids
    - C. oxygen and ATP
    - D. water and sugars

13. Where do the light-independent reactions occur?
    - A. stroma
    - B. thylakoids
    - C. chlorophyll
    - D. mitochondria
14. Complete the illustration by writing the reactants and products of the light-dependent and light-independent reactions. Also, fill in the energy source that excites the electrons.

15. Solar power uses cells or panels to absorb the sun’s energy. That energy is then used to create electricity. How does this compare to the light dependent reactions of photosynthesis?

*Light energy excites electrons to be picked up by NADPH and used to build glucose, on solar panels the light energy can cause the electrons to become electrical energy that can be used in a home*