Answer Sheet: Photosynthesis

1. What is the primary purpose of photosynthesis?

Answer: To convert light energy into chemical energy

2. In which part of the chloroplast do the light-dependent reactions occur?

Answer: Thylakoid membranes

3. Which of the following is a product of the light-dependent reactions?

Answer: ATP

4. What molecule is used to fix carbon dioxide during the Calvin cycle?

Answer: Ribulose bisphosphate (RuBP)

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

Answer: Soil pH

6. Define photosynthesis and explain its significance to life on Earth.

Answer: Photosynthesis is the process by which green plants, algae, and some bacteria convert light energy into chemical energy in the form of glucose. It is significant because it provides the primary energy source for all ecosystems and produces oxygen as a byproduct, which is essential for aerobic life.

7. What role do forests play in the global carbon cycle in terms of photosynthesis?

Answer: Forests act as carbon sinks, absorbing carbon dioxide from the atmosphere through photosynthesis, which helps mitigate climate change by storing carbon in the form of biomass.

8. Discuss the importance of light intensity, carbon dioxide concentration, and temperature in influencing the rate of photosynthesis. How can this knowledge be applied in agriculture?

Answer:

9. Explain the two main stages of photosynthesis, including where they occur and their outcomes. How do these stages interconnect to support plant growth?

Answer: