

AP Biology
Review Questions: Photosynthesis and Cellular Respiration

1. What two entities comprise the visible spectrum?
2. Electrons are lost during a(an) _____ reaction.
3. What is the range of visible light that the prism reflects?
4. What is the essential ingredient "to start" photosynthesis
5. Define grana.
6. What connects one grana to another? _____
7. A green pigment that is involved in light absorption for photosynthesis: _____
8. In your own words, define the term photosynthesis.
9. Give the balanced equation for photosynthesis?
10. Plants absorb _____ and _____ light.
11. Why are leaves green?
12. If a red, blue, and green light is shown on a red object, what light(s) are reflected and absorbed? What are the chances that this cell is a chloroplast?
13. Write a detailed equation for the light reactions that include NADP⁺, ATP, P, NADPH.
14. Prepare a drawing of chloroplast labeling thylakoids, granum, lamella, lumen and stroma.
15. Summarize the events of the noncyclic light reactions beginning with the absorption of light by P680:
 - a) Path of electrons
 - b) Role of water
 - c) Protons gained in (a) and (b)
 - d) Final electron acceptor
16. What is gained by non-cyclic events?
17. Summarize the events of the cyclic light reactions beginning with the absorption of light by P700.
18. What is gained by cyclic events?
19. Summarize the events of chemiosmotic phosphorylation. What is gained by this event?
20. Why are specific products of the light reaction essential for the Calvin cycle (Dark Reaction) to take place?
21. Summarize the events of the Calvin cycle. What is gained by this event and why?
22. In your own words, explain how the paired terms are related to each other.
 - a) Krebs cycle, electron transport chain
 - b) PGAL, pyruvic acid
 - c) Glycolysis, respiration
23. What is the net energy gain in glycolysis? Explain.
24. What happens to the NADH produced in Glycolysis?
25. What happens to the pyruvic acid produced in glycolysis?
26. What happens to pyruvic acid before it enters the Krebs cycle?