

General Biology –Chapter 7 Review

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This review is meant to highlight basic concepts from Chapter 7. It does not cover all concepts presented by your instructor. Refer back to your notes, unit objectives, labs, handouts, etc. to further prepare for your exam.

1. Define photosynthesis as it relates to its purpose and write the equation that represents the process.
2. Besides plants, list 2 other organisms that can undergo the process of photosynthesis.
3. Describe the structure and function of the following chloroplast components: stroma, thylakoid, grana, and chlorophyll
4. List and explain how the photosynthetic pigments contribute to the color of a leaf. (Why are plants green?)
5. List the 2 main stages of photosynthesis and briefly explain the major purpose of each stage.
6. During which stage of photosynthesis is oxygen released? Explain the process.

Fill in the blank/True or False

7. Photosynthetic organisms are called _____ because they have chloroplasts to produce their own organic molecules for energy
8. Organisms that rely on other organisms to gain energy are called _____.
9. _____ (organelle) are present in organisms that can undergo the process of photosynthesis.
10. Light reactions occur in the stroma of the chloroplast. True or false?
11. The main function of sunlight is to excite electrons in the chlorophyll. True or false?
12. A photosystem is a grouping of chlorophyll pigments within the stroma of the chloroplast that capture the sun's energy. True or false?
13. Chlorophyll a and c are the main pigments of photosynthesis. True or false?
14. Photosystem I passes electrons to photosystem II. True or false?
15. Chemiosmotic ATP synthesis occurs across the thylakoid membrane. True or false?
16. _____ is formed when NADP⁺ accepts two electrons and an H⁺.
17. The light reactions primary function is to produce ATP to fuel the Calvin Cycle. True or false?
18. _____ is the first step of the Calvin Cycle.
19. The Calvin Cycle occurs in the stroma of the chloroplast. True or false?
20. The enzyme that aids in carbon dioxide fixation is called _____.
21. During the carbon dioxide reduction stage of the Calvin Cycle, G3P is converted to 3PG. True or false?
22. G3P is the main product of the Calvin Cycle. True or false?
23. How many molecules of G3P are needed to regenerate more RuBP? _____
24. How many turns of the Calvin Cycle are needed to turn out one G3P? _____
25. When the stomata of a leaf close during the daytime C₃ plants undergo photorespiration, where it uses oxygen to produce carbon dioxide. True or False?
26. Plants that undergo CAM photosynthesis are plants like azaleas, maples, oak trees, wheat and other traditional land plants. True or false?