

## **Module 7: Photosynthesis — Study Questions**

1. Write the balanced equation for photosynthesis.
2. What are the reactants and products of photosynthesis?
3. Where does photosynthesis occur? What organelle?
4. What is a chloroplast? Describe its structure.
5. Define thylakoid, granum, and stroma.
6. Where do the light-dependent reactions occur?
7. Where does the Calvin Cycle occur?
8. Why are most plants green?
9. What is chlorophyll and what does it do?
10. What is the role of the antenna complex in photosystems?
11. Trace the path of an electron from water to NADPH.
12. Why is water split at Photosystem II? What byproduct is released?
13. How is ATP generated during the light reactions (chemiosmosis)?
14. What are the products of the light-dependent reactions?
15. What does the Calvin Cycle produce?
16. What two products from the light reactions does the Calvin Cycle require?
17. What is RuBisCO? Why is it important?
18. What is photorespiration? Why is it a problem?
19. How do C<sub>4</sub> plants avoid photorespiration?

20. How do CAM plants (like cacti) conserve water while performing photosynthesis?