**CHAPTER 7: PHOTOSYNTHESIS**

Review Questions

1. What are the various steps of energy conversions by which light energy is ultimately stored into sugars in plants? Which of these conversions occur in light-reactions, and which of them in the Calvin cycle? (Mention the specific points where these occcur.)
2. What is the rationale behind the electron transport that ultimately leads to ATP production? Why can’t ATP be produced directly by electron transport?
3. Why can’t the ATP produced in chloroplast be used by other parts of the plant cell directly?
4. Though Calvin cycle is thought to be light-independent, without the light-dependent stage, it can’t function in the plant. Why so?
5. How many turns of Calvin cycle are required to produce one molecule of glucose? Explain briefly.
6. Why is the “dark side” of RubisCO (the oxygenase activity) a problem for plants? How is this problem counteracted (to some extent) by some plants?
7. Give the overall chemical equation of photosynthesis. Explain where each reactant is obtained by the plant and where each one participates. Then explain where each product is produced during photosynthesis and the ultimate destination of each of them.

**Thought question:**

“Photosynthesis is a brilliant display of nature’s selflessness.” Comment on this statement. Which participant of photosynthesis do you find truly selfless, and why?