

Board – CBSE

Class – 11

Chapter – Photosynthesis in Higher Plants

1. Define photophosphorylation.
2. Expand RuBisCO.
3. How many ATP and NADPH molecules will be required to make one molecule of glucose through the Calvin pathway?
4. Describe photosynthetic units.
5. What is RuBisCO? Where is it present in C₃ and C₄ plants?
6. List the processes which occur during the photochemical phase of photosynthesis.
7. Briefly describe the Z-scheme and why is it called so?
8. How does PS II supply electrons continuously in noncyclic ETS?
9. Give the diagrammatic explanation for ATP synthesis through chemiosmosis.
10. Write a short note on photosynthetic pigments.
11. What is PEP? What is its role in the biosynthetic process?
12. (a) Mention the photosystems and other components involved in non-cyclic photophosphorylation.
(b) Name the components involved in Cyclic ETS.
(c) Which is the major limiting factor for photosynthesis.
(d) What is the CO₂ saturation point for C₃ & C₄ plants?
(e) Which abiotic factor affects the photosynthesis indirectly?
13. Describe the Calvin cycle diagrammatically.
14. Distinguish between Bundle sheath and Mesophyll cells of C₄ plant.
15. Compare Photosystem I and Photosystem II.
16. Describe cyclic photophosphorylation.
17. How many turns of the Calvin cycle are required for formation of sucrose molecules?
18. (a) What is the absorption spectrum?
(b) Which pigment forms a reaction centre?

19. How do photosynthetic bacteria such as Cyanobacteria conduct photosynthesis in the absence of chloroplasts?
20. Do photosynthetic reactions such as dark reactions require light? Explain.
21. The rate of photosynthesis decreases at higher temperatures. Why?
22. If a green plant is kept in dark with proper ventilation, can this plant carry out photosynthesis? Can anything be given as a supplement to maintain its growth or survival?
23. What is the relationship between photosynthesis and respiration?
24. What are the important events and end products of light reaction?
25. How are succulents able to meet their photosynthetic CO_2 requirements as they are known to keep their stomata closed during the day to check transpiration?