

SUBJECT: BIOLOGY**PHOTOSYNTHESIS IN HIGHER PLANTS****ASSIGNMENT NO. 5**

- Q1. Define photosynthesis.
- Q2. Describe briefly experiments performed by Joseph Priestly, Ingehouis, Sachs, Engleman & Van Niel for photosynthesis.
- Q3. Describe the sectional view of chloroplasts & give the site of light & dark reaction of photosynthesis.
- Q4. What are the pigments involved in photosynthesis. Name them & give functions of accessory pigments.
- Q5. What are the differences between:- (i) Chl a & Chl b (ii) Action & absorption spectrum.
- Q6. Describe the basic characteristics of photosystems & explain how photosystem I differ from photosystem II.
- Q7. What is the role of antennae molecules in light harvesting complex?
- Q8. What are 2 steps (main) of photosynthesis? Give the diagrammatic scheme of light reaction (z-scheme).
- Q9. What is the need of photolysis of water & give the ions which play an important role in it.
- Q10. Define photophosphorylation
- Q11(a) Give schematic representation of non-cyclic & cyclic photophosphorylation.
(b) Give difference between them also.
- Q12(a) What does chemiosmotic hypothesis explain ?
(b) Explain chemiosmotic hypothesis with help of schematic diagram.
- Q13. Describe the biosynthetic phase of photosynthesis. How is it linked to light reaction?
- Q14. When & why does photorespiration take place in plants? How does this process result in a loss to the plants?
- Q15. Why do plants like maize & sugarcane have dimorphic chloroplasts? Explain photosynthetic carbon cycle in such plants.
- Q16. Give differences between C₃ & C₄ plants.
- Q17. By looking at which internal structure of a plant can you tell whether a plant is C₃ or C₄?
- Q18. What is law of limiting factors? How would rate of photosynthesis be affected if soil water becomes limiting. Explain.
- Q19. Why does the rate of photosynthesis decrease at higher light intensities? What plays a protective role in such conditions?
- Q20. What is the effect of increasing CO₂ concentration on rate of photosynthesis of C₃ & C₄ plants?
- Q21. What is the effect of high & low temperature on rate of photosynthesis?