



Class 11 Biology | Photosynthesis In Higher Plants

MCQ WORKSHEET • 15 questions • Choose one correct option • Suggested time: 25 minutes

1. The oxygen released during photosynthesis comes directly from

- A. Water B. Chlorophyll
C. Glucose D. Carbon dioxide

2. The reaction centre of photosystem II is

- A. RuBisCO B. P680 C. PEP D. P700

3. Cyclic electron flow around photosystem I directly produces

- A. ATP only B. NADPH only
C. Oxygen only D. ATP and oxygen

4. During photophosphorylation, protons accumulate mainly in the

- A. Chloroplast intermembrane space
B. Nucleus
C. Cytosol
D. Thylakoid lumen

5. ATP synthase makes ATP as protons flow from the lumen to the

- A. Outer envelope B. Cytosol directly
C. Vacuole D. Stroma

6. The first stable product of the C3 pathway is

- A. Pyruvate
B. Ribulose biphosphate
C. 3-phosphoglycerate
D. Oxaloacetate

7. The CO₂ acceptor in the Calvin cycle is

- A. Acetyl-CoA B. NADP C. RuBP D. PEP

8. In C₄ leaves, initial CO₂ fixation occurs in

- A. Xylem vessels
B. Mesophyll cells
C. Bundle sheath cells only
D. Guard cells only

9. The initial CO₂ acceptor in C₄ photosynthesis is

- A. PGA B. RuBP C. PEP D. Glucose

10. The Calvin cycle in a typical C₄ plant occurs mainly in

- A. Mesophyll cytosol B. Bundle sheath cells
C. Phloem sieve tubes D. Root epidermis

11. Photorespiration increases when RuBisCO binds more

- A. Nitrogen B. Oxygen C. Hydrogen D. Methane

12. C₄ plants minimise photorespiration by

- A. Concentrating CO₂ around RuBisCO
B. Stopping ATP synthesis
C. Eliminating the Calvin cycle
D. Using no chlorophyll

13. Fixing 3 CO₂ in the Calvin cycle requires

- A. 9 ATP and 6 NADPH
B. 3 ATP and 3 NADPH
C. 6 ATP and 9 NADPH
D. 18 ATP and 12 NADPH

14. At low light, adding CO₂ may not increase photosynthesis because

- A. Chlorophyll is absent in all leaves
B. CO₂ is always toxic
C. Respiration stops
D. Light is limiting

15. The accessory pigments chiefly help by

- A. Preventing all light absorption
B. Replacing all enzymes
C. Producing roots
D. Absorbing additional wavelengths and protecting chlorophyll

ANSWER KEY — check after completing all 15 questions

1.A 2.B 3.A 4.D 5.D 6.C 7.C 8.B 9.C 10.B 11.B 12.A 13.A 14.D 15.D

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper