

Chapter – 11 | Photosynthesis in Higher Plants

QUIZ
PART-08

1. CO_2 concentration in the atmosphere is about —

- A. 0.03–0.04%
 - B. 3–4%
 - C. 30–40%
 - D. 10–20%
- (A)

Explanation : CO_2 is present in very low concentration and acts as a limiting factor.

2. Long-term CO_2 concentration above about 0.05% is —

- A. Always useful
 - B. Harmful
 - C. Without any effect
 - D. Needed for water absorption
- (B)

Explanation : A small rise increases fixation, but more than this is harmful in the long run.

3. C_4 plants show CO_2 saturation at about —

- A. $100 \mu\text{L L}^{-1}$
 - B. $360 \mu\text{L L}^{-1}$
 - C. $700 \mu\text{L L}^{-1}$
 - D. $1000 \mu\text{L L}^{-1}$
- (B)

Explanation : C_4 plants reach saturation around $360 \mu\text{L L}^{-1}$.

4. C_3 plants show CO_2 saturation only after —

- A. $120 \mu\text{L L}^{-1}$
 - B. $250 \mu\text{L L}^{-1}$
 - C. $450 \mu\text{L L}^{-1}$
 - D. $900 \mu\text{L L}^{-1}$
- (C)

Explanation : C_3 plants respond more to increased CO_2 and saturate after $450 \mu\text{L L}^{-1}$.

5. CO_2 enrichment is used in greenhouses for crops like —

- A. Tomatoes and bell peppers
 - B. Coconut only
 - C. Wheat only
 - D. Mosses only
- (A)

Explanation : CO_2 -enriched atmosphere increases yield in greenhouse crops.

6. Dark reactions are temperature controlled because they are —

- A. Enzymatic
 - B. Non-living
 - C. Only physical reactions
 - D. Without proteins
- (A)

Explanation : Enzymes involved in dark reactions are affected by temperature.

7. C_4 plants generally show high photosynthetic rate at —

- A. High temperature
 - B. Very low temperature only
 - C. Complete darkness
 - D. No CO_2
- (A)

Explanation : C_4 plants are adapted to higher temperatures.

8. Only about how much absorbed water is used in photosynthesis?

- A. 1%
 - B. 20%
 - C. 50%
 - D. 90%
- (A)

Explanation : Only about one percent of absorbed water is directly used in photosynthesis.

9. Water stress reduces photosynthesis because it causes —

- A. Stomatal closure
 - B. Wilting of leaves
 - C. Reduced metabolic activity
 - D. All of the above
- (D)

Explanation : Water scarcity affects CO_2 entry, leaf surface area and metabolism.

10. In C_3 plants, primary CO_2 acceptor and first stable product are respectively —

- A. PEP and OAA
 - B. RuBP and PGA
 - C. RuBP and OAA
 - D. PEP and PGA
- (B)

Explanation : C_3 plants use RuBP as acceptor and form PGA as first stable product.