

1. Synthesis of complex organic substances from simple inorganic raw materials in the presence of sunlight and chlorophyll is called as _____ which is a _____ process.

- (A) photosynthesis, anabolic
- (B) photosynthesis, catabolic
- (C) respiration, anabolic
- (D) respiration, catabolic

2. Accessory photosynthetic pigments in most green plants are

(A) chlorophyll a

(B) chlorophyll b

(C) carotenoids and xanthophylls

(D) both (B) and (C)

3. If green plant cells are incubated with O^{18} -labelled CO_2 , which of the following molecules will become radioactive when the cells are exposed to light?

- (A) ATP
- (B) Water
- (C) Sugar
- (D) O_2

4. _____ is the process of synthesis of ATP from ADP and P_i in the presence of light.

(A) Phosphorylation

(B) Photophosphorylation

(C) Photosystem

(D) Oxidative phosphorylation

5. Photochemical phase does not include

(A) light absorption

(B) water splitting and O₂ release

(C) ATP and NADPH formation

(D) CO₂ fixation

6. Refer the given reaction.



Where does this reaction take place in the chloroplasts of plants?

- (A) Outer surface of thylakoid membrane
- (B) Inner surface of thylakoid membrane
- (C) In the matrix (stroma)
- (D) Inter membrane space

Direction: Refer the given diagrammatic representation of an electron micrograph of a section of chloroplast to answer

7. The option which correctly depicts the functions of parts X, Y and Z.

	X	Y	Z
(1)	Dark reaction	Light reaction	Cytoplasmic inheritance
(2)	Light reaction	Carbohydrate Synthesis	Carbohydrate storage
(3)	Light reaction	Carbohydrate Storage	Carbohydrate synthesis
(4)	Carbohydrate synthesis	Carbohydrate storage	Cytoplasmic inheritance

8. In C_4 plants, Calvin cycle enzymes are present in

(A) chloroplasts of mesophyll cell

(B) chloroplasts of bundle sheath cells

(C) cytoplasm of guard cells

(D) cytoplasm of epidermal cells

9. Select the incorrect pair

(A) 2-carbon compound – Aspartic acid

(B) 3-carbon compound – PGA

(C) 4-carbon compound – Malic acid

(D) 5-carbon compound - RuBP

10. Identify the correct sequence of stages of Calvin cycle.

(A) Reduction → Carboxylation → Regeneration

(B) Carboxylation → Regeneration → Reduction

(B) Carboxylation → Reduction → Regeneration

(D) Reduction → Regeneration → Carboxylation

(11) Kranz anatomy is not exhibited by which of the following plants?

(A) Maize

(B) Sorghum

(C) Sugarcane

(D) Sunflower

- (12) How many ATP and NADPH molecules are respectively required to make one molecule of glucose through Calvin cycle?
- (A) 3 and 2
 - (B) 9 and 6
 - (C) 18 and 12
 - (D) 12 and 18

(13) How many ATP and NADPH₂ are respectively produced in the process of photorespiration?

(A) 2 and 4

(B) 1 and 2

(C) 4 and 6

(D) 0 and 0

(14) During light reaction in photosynthesis the following are formed

(A) ATP and sugar

(B) hydrogen, O₂ and sugar

(C) ATP, hydrogen donor and O₂

(D) ATP, hydrogen and O₂ donor

15. Which of the three organelles are involved in photorespiration

(A) Chloroplast, Mitochondrion, Lysosome

(B) Chloroplast, peroxisome, mitochondrion

(C) chloroplast, glyoxisome, mitochondrion

(D) chloroplast, mitochondrion, nucleus
