

Photosynthesis

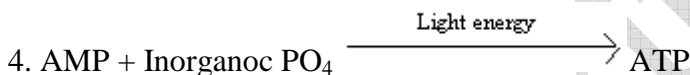
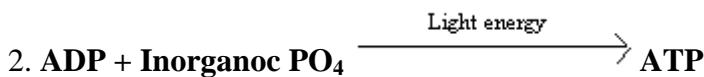
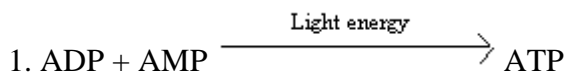
1. Which element is located at the centre of the porphyrin ring in chlorophyll? 1997: 2003

1. Calcium 2. Magnesium 3. Potassium 4. Manganese

2. Which fractions of the visible spectrum of solar radiations are primarily absorbed by carotenoids of the higher plants? 2003

1. Blue and green 2. Green and red 3. Red and violet 4. Violet and blue

3. Which one of the following concerns photophosphorylation? 2003



4. In sugarcane plant $C_{14}O_2$ is fixed in malic acid ,in which the enzyme that fixes CO_2 is

2003

1. Ribulose biphosphate carboxylase 2. Phosphoenol pyruvic acid carboxylae

3. Ribulose phosphate kinase 4. Pructose phosphatase

5. Stomata of CAM plants

2003

1. Are always open
2. Open during the day and close at night
3. Open during the night and close during the day
4. Never open

6. **Plants adapted to low light intensity have** 2004

1. Larger photosynthetic unit size than the sun plants

2. Higher rate of CO₂ fixation than the sun plants

3. More extended root system

4. Leaves modified to spines

7. **Photosynthetic Active Radiation(PAR) has the following range of wavelengths**

2004

1. 400-700 nm

2. 450-950 nm

3. 340-450 nm

4. 500-600 nm

8. **The deficiencies of micronutrients, not only affects growth of plants but also vital functions such as photosynthetic and mitochondrial electron flow. Among the list given below ,which group three elements shall affect the most , both photosynthetic and mitochondrial electron transport.** 2005

1. Cu, Mn, Fe

2. Co, Ni, Mo

3. Mn, Co, Ca

4. Ca, K, Na

9. **Photosynthesis in C₄ plants is relatively less limited by atmospheric CO₂ levels because.**

2005

1. Four carbon acids are the primary initial CO₂ fixation products.

2. The primary fixation of CO₂ is mediated via PEP carboxylase.

3. Effective pumping of CO₂ into bundle sheath cells.

4. Rubisco in C₄ plants has higher affinity for CO₂.

10. **As compared to a C₃ plants how many additional molecules of ATP are needed for net production of one molecule of hexose sugar by C₄ plants**

2005

1. Two

2. Six

3. Zero

4. Twelve

11. **During photorespiration , the oxygen consuming reactions occur in** 2006
1. Stroma of chloroplasts
 2. Stroma of chloroplasts and mitochondria
 - 3. Stroma of chloroplasts and peroxysomes**
 4. Grana of chloroplasts and peroxysomes.
12. **In photosystem –I, the first electron acceptor is** 2006
1. An iron sulphur protein
 2. Ferredoxin
 3. Cytochrome
 4. Plastocyanin
13. **The first acceptor of electrons from an excited chlorophyll molecule of pigment system II is** 2007
1. Iron sulphur protein
 2. Ferredoxin
 - 3. Quinone**
 4. Cytochrome
14. **In the leaves of C₄ plants, malic acid formation during CO₂ fixation occurs in the cells of** 2007
1. Bundle sheath
 2. Phloem
 3. Epidermis
 - 4. Mesophyll**
15. **Oxygenic photosynthesis occurs in** 2009
1. *Rhodospirillum*
 2. *Chlorobium*
 3. *Chromatium*
 4. *Oscillatoria*
16. **Kranz anatomy is exceptional feature of** 2009
1. CAM plants
 2. C₂ plants
 3. C₃ plants
 - 4. C₄ plants**
17. **Cyclic photophosphorylation results in the formation of** 2009
1. ATP,NADPH and O₂
 - 2. ATP**
 3. NADPH
 4. ATP and NADPH

18. Read the following four statements, A, B, C and D and select the right option having both correct statements.

2010

Statement :

- (A) Z scheme of light reaction takes place in presence of PSI only
- (B) Only PSI is functional in cyclic photophosphorylation.
- (C) Cyclic photophosphorylation results into synthesis of ATP and NADPH₂
- (D) Stroma lamellae lack PSII as well as NADP.

Options :

- (1) C and D (2) **B and D** (3) A and B (4) B and C

19. Kranz anatomy is one of the characteristics of the leaves of

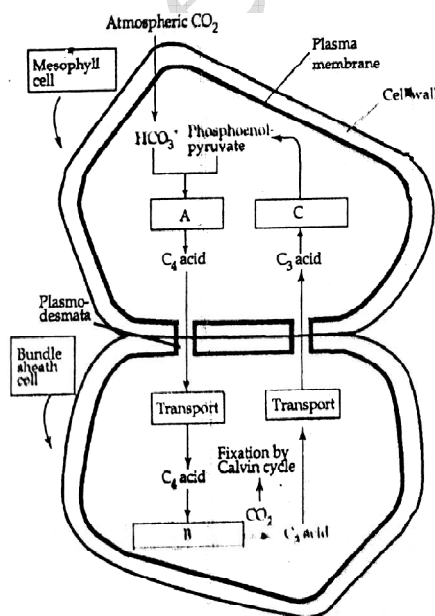
2010

- (1) Mustard (2) Potato (3) Wheat (4) **Sugarcane**

20. Study the pathway given below

In which of the following options correct words for all the three blanks A, B and C are indicated.

2010



- | | | |
|-------------------|------------------------|---------------------|
| A | B | C |
| 1 Carboxylation | Decarboxylation | Reduction |
| 2 Decarboxylation | Reduction | Regeneration |
| 3 Fixation | Transamination | Regeneration |
| 4 Fixation | Decarboxylation | Regeneration |

21. **In Kranz anatomy, the bundle sheath cells have .** 2011
- (1) thin walls, many intercellular spaces and no chloroplasts
 - (2) thick walls, no intercellular spaces and large number of chloroplasts
 - (3) thin walls, no intercellular spaces and several chloroplasts**
 - (4) thick walls, many intercellular spaces and few chloroplasts
22. **Which one of the following cellular parts is correctly described ?** 2012
- (1) Lysosomes - optimally active at a pH of about 8.5
 - (2) Thylakoids - flattened membranous sacs forming the grana of chloroplasts**
 - (3) Centrioles - sites for active RNA synthesis
 - (4) Ribosomes - those on chloroplasts are larger (80s) while those in the cytoplasm are smaller (70s)
23. The correct sequence of cell organelles during photorespiration is 2012
- (1) Chloroplast, -vacuole, -peroxisome
 - (2) Chloroplast,-Golgibodies,-mitochondria
 - (3) Chloroplast,-Rough Endoplasmic reticulum,-Dictyosomes
 - (4) Chloroplast, peroxisome ,mitochondria.**
24. A process that makes important difference between C₃ and C₄ plants is 2012
- 1. Phtorespiration** 2. Transpiration 3. Glycolysis 4. Photosynthesis