

## Photosynthesis in Higher Plants

- Which among the following statement is incorrect
  - Joseph Priestly discovered the necessity of  $\text{CO}_2$  during photosynthesis
  - Jan Ingenhousz proved the sunlight is essential for plants
  - Julius Von Sachs proved the production of glucose during photosynthesis
  - Van Niel proved the evolution of  $\text{O}_2$  from  $\text{H}_2\text{O}$  but not from  $\text{CO}_2$
- Which one of the following statement with respect to cyclic photophosphorylation is correct
  - $\text{NADPH}_2$  is produced during cyclic photophosphorylation
  - Only ATP is synthesized during cyclic photophosphorylation
  - Released electrons can not come back to same chlorophyll molecule
  - The reaction centre of chlorophyll a molecule in PS I is  $\text{P}_{680}$
- Z – Scheme of electron transport explains
  - Cyclic photo phosphorylation
  - Non-cyclic photo phosphorylation

- Oxidative photo phosphorylation
- Substrate level photo phosphorylation
- The primary  $\text{CO}_2$  acceptor in  $\text{C}_3$  plants is
  - RUBP
  - PEP
  - OAA
  - MA
- The net requirement of assimilatory power for the formation of 6 hexose molecules in maize plant is
  - 72 ATP, 48 NADPH
  - 90 ATP, 60 NADPH
  - 180 ATP, 72 NADPH
  - 108 ATP, 72 NADPH
- Match Column I with Column II
 

<b>Column - I</b>	<b>Column - II</b>
A) RUBP	I) Ultimate end product
B) G -3p	II) Primary $\text{CO}_2$ acceptor
C) PGA	III) First stable product
D) Starch	IV) Product after reduction phase

The correct match is

- |       |     |     |     |
|-------|-----|-----|-----|
| A     | B   | C   | D   |
| 1) II | IV  | III | I   |
| 2) II | IV  | I   | III |
| 3) I  | IV  | II  | III |
| 4) II | III | IV  | I   |

- Photorespiration is

# Carotenes protects plants from?

## NEET - 2020 Botany

- $\text{C}_3$  Cycle      2)  $\text{C}_4$  Cycle  
3)  $\text{C}_2$  Cycle      4)  $\text{C}_5$  Cycle
- The splitting of water molecule is associated with
  - Photosystem I
  - Photosystem II
  - Cytochrome complex
  - Coupling factor
- Number of Triose molecules required for the regeneration of six RUBP molecules during Calvin cycle
  - Six
  - Two
  - Twelve
  - Ten
- Carotenes protects plants from
  - Photo-oxidation
  - Photorespiration
  - Photosynthesis
  - Dessication

### KEY

- |     |     |     |     |      |
|-----|-----|-----|-----|------|
| 1-1 | 2-2 | 3-2 | 4-1 | 5-3  |
| 6-1 | 7-3 | 8-2 | 9-4 | 10-1 |

## Respiration in Plants

- Which statement is wrong for glycolytic pathway
  - ATP is utilized while conversion of fructose - 6- phosphate to fructose 1,6 - bis phosphate
  - $\text{NADH}+\text{H}^+$  is synthesized while conversion of glyceraldehyde - 3-phosphate to bi phospho glyceric acid
  - Phosphoenol pyruvate is converted to pyruvic acid in last step of pathway
  - Fructose is converted to glucose -6- phosphate in the first step
- Amount of Energy released when ATP is hydrolysed to ADP & IP is
  - 8 K. Cals.
  - 6 K. Cals.
  - 7.3 K. Cals.
  - 9.3 K. Cals.
- Which among the following statement is incorrect
  - Embden, Meyerhoff and Parnas discovered the glycolysis
  - Krebs cycle occur in cytoplasm of the cell
  - Electron transport system occurs in inner membrane of mitochondria
  - Acetyl Co. A is connecting link between glycolysis and Krebs cycle
- Total number of ATP formed by substrate level phosphorylation in Glycolysis are
  - 2
  - 4
  - 36
  - 38
- The number of decarboxylations involved in Krebs cycle are
  - 2
  - 1
  - 3
  - 0
- Total number of ATP molecules formed when one citric acid molecule is oxidized in aerobic respiration
  - 19
  - 15
  - 14
  - 12
- Number of oxidations and decarboxylations occur in Krebs cycle respectively are
  - 2 and 2
  - 3 and 2
  - 4 and 2
  - 2 and 4
- One turn of Krebs Cycle yields
  - 3  $\text{NADH}_2$ , 1  $\text{FADH}_2$ , 1 ATP
  - 2  $\text{NADH}_2$ , 2  $\text{FADH}_2$ , 1 GTP
  - 4  $\text{NADH}_2$ , 2  $\text{FADH}_2$ , 1 GTP
  - 3  $\text{NADH}_2$ , 2  $\text{FADH}_2$ , 1 GTP

- In Electron Transport System, how many protons are transported from the matrix to inter membrane space, when electrons move from mitochondrial NADH to molecular oxygen.
  - 12
  - 11
  - 10
  - 14
- Most of the amino acids enter into the following stage of respiration
  - Glycolysis
  - Krebs cycle
  - Electron transport system
  - Fermentation
- The product of link reaction of aerobic respiration is
  - Pyruvic acid
  - Citric acid
  - Acetyl Co. A
  - Oxalo acetic acid

### KEY

- |     |     |     |     |     |     |     |      |
|-----|-----|-----|-----|-----|-----|-----|------|
| 1-4 | 2-3 | 3-2 | 4-2 | 5-1 | 6-4 | 7-3 | 8-1  |
|     |     |     |     |     |     |     | 9-3  |
|     |     |     |     |     |     |     | 10-2 |
|     |     |     |     |     |     |     | 11-3 |

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