

Photosynthesis in Higher Plants

- Which among the following statement is incorrect
 - Joseph Priestly discovered the necessity of 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 O_2 from H_2O but not from CO_2
- Which one of the following statement with respect to cyclic photophosphorylation is correct
 - 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 P_{680}



Writer

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Subject Expert

- Identify the correct match
 - Evolution of oxygen - Cyclic photophosphorylation
 - Light reaction - Stroma of chloroplast
 - PEP Carboxylation - Bundle sheath cell
 - Synthesis of ATP + NADPH - Grana membrane
- Z - Scheme of electron transport explains
 - Cyclic photo phosphorylation
 - Non-cyclic photo phosphorylation
 - Oxidative photo phosphorylation
 - Substrate level photo phosphorylation
- The primary CO_2 acceptor in C_3 plants is
 - RUBP
 - PEP
 - OAA
 - MA

Carotenes protects plants from?

- 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

Column - I

- RUBP
- G -3p
- PGA
- Starch

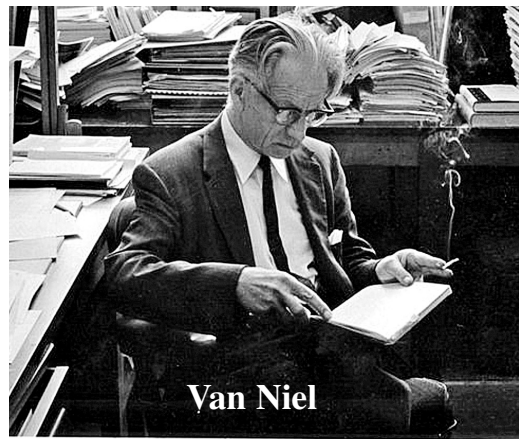
Column - II

- Ultimate end product
- Primary CO_2 acceptor
- First stable product
- 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
 - C_3 Cycle
 - C_4 Cycle
 - C_2 Cycle
 - 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
- In CAM plants, CO_2 acceptor is
 - RUBP
 - OAA
 - PEP
 - PGA
- Identify the wrong statement
 - O_2 is not evolved in bacterial photosynthesis
 - Chemical structure and function of chlorophyll was determined by Willstatter



Van Niel

NEET-2020 Botany

- Plants need boron for translocation of sugars
- Robert Hooke discovered the purification of foul air by green plants
- Stomata of CAM plants
 - Always open
 - Never open
 - Open during night and close during day time
 - Open during day and close during night time
- The end products of light reaction are
 - ADP and NADPH_2
 - ATP and NADPH_2
 - ATP and NADP
 - ADP and NADP

KEY

1-1 2-2 3-4 4-2 5-1 6-3 7-1 8-3 9-2 10-4 11-1 12-3
13-4 14-3 15-2

Plant Growth And Development

- You are given a callus tissue with its potential for differentiation in an artificial medium. Which of the hormone would you add to the medium to produce shoots?
 - Auxins
 - Gibberellins
 - Cytokinins
 - Absciscic acid
- Which among the following statement is incorrect?
 - Auxins initiates roots from callus in tissue culture.
 - Foolish seedling disease of rice is also called bakane disease.
 - Cytokinins promotes senescence in several plants.
 - Absciscic acid stimulates closure of stomata.
- Vernalization is
 - Growth curve related to Light
 - Effect of Photoperiods of Plant growth
 - Low temperature treatment to produce flowers
 - Diurnal photoperiodicity
- Formulae of a growth which can be represented in Sigmoid curve is
 - $L_1 = L_0 + rt$
 - $L_0 = L_1 + rt$
 - $W_0 = W_1 e^{rt}$
 - $W_1 = W_0 e^{rt}$

- Match Column I with Column II

Column - I

- Zeatin
- Florigen
- IBA
- NAA

Column - II

- Flowering Hormone
- Synthetic Auxin
- Cytokinins
- Natural Auxin

The correct match is

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

- Identify the mismatch
 - Auxins - apical dominance
 - Gibberellins - bolting
 - Cytokinins - cell division
 - Absciscic acid - cell elongation
- Identify wrong match
 - Cytokinins - zeatin

- Auxins - IAA, IBA
- Absciscic acid - sesquiterpenoids
- Gibberellins - 2, 4- D

- Avena curvature test and dwarf maize test are bioassays respectively

- Auxins and cytokinins
- Auxins and gibberellins
- Gibberellins and cytokinins
- Cytokinins and ethylene

- Cholodny - Went theory is related with

- Photo morphogenesis
- Phototropism
- Photo respiration
- Photosynthesis

- Identify the wrong statement

- Auxins accumulated on the lower surface of horizontally placed stem
- Phytochrome, a protein, has regulatory functions
- Buds and embryos require vernalization
- Gibberellins promotes leaf abscission

- Auxanometer is used to measure

- Length
- Width
- Growth
- Depth

- Phytochrome was discovered by

- Borthwick and Handricks
- F.W. Went
- Garner and Allard
- Calvin

- Highest concentration of auxins are found in

- Stem
- Leaves
- Fruits
- Root tip and shoot tip

- The maximum growth rate occurs in

- Lag phase
- Log phase
- Stationary phase
- Senescent phase

- Photoperiodism was first discovered in

- Tomato
- Potato
- Tobacco
- Chillies

KEY

1-3 2-3 3-3 4-4 5-4 6-4 7-4 8-2 9-1
10-4 11-3 12-1 13-4 14-2 15-3

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
 - Emdben, 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 NADH_2 , 1 FADH_2 , 1 ATP
- 2 NADH_2 , 2 FADH_2 , 1 GTP
- 4 NADH_2 , 2 FADH_2 , 1 GTP
- 3 NADH_2 , 2 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