BIOLOGY

BOOKS - DINESH PUBLICATION ENGLISH

PHOTOSYNTHESIS

Mcq

1. How much energy is utilised in the synthesis of one gram mole of glucose

A. 673 kcal

B. 686 kcal

C. 666 kcal

D. 696 kcal.

Answer: B

Watch Video Solution

2. What is the number of light quanta required for the evolution of one O_2 ?

A. Oxygen yield

B. Photosynthetic yield

C. Quantum yield

D. Organic yield

Answer: C

Watch Video Solution

3. Red drop is

A. Drop in oxygen yield

B. Drop in quantum yield

C. Drop in organic yield

D. Drop in photosynthetic yield.

Answer: D

Watch Video Solution

4. Red drop occurs in wavelength of

A. 492 nm

B. 535 nm

C. 586 nm

D. 680 nm.

Answer: D

Watch Video Solution

5. Emerson effect is related to

A. Two pigment systems

B. Two photosynthetic units

C. Two photophosphorylations

D. None of the above.

Answer: A

Watch Video Solution

6. In light phase of photosynthesis there is formation of

A. ATP

B. $NADPH_2$

C. Both ATP and $NADPH_2$

D. Carbohydrates.

Answer: C

Watch Video Solution

7. The photosynthetic unit having 250 chlorophyll molecules is called

A. Photon

B. Quantum

C. Quantasome

D. Oxysomes.

Answer: C

Watch Video Solution

8. Photosynthesis proceeds in sequence of

A. Dark phase and light phase

B. Light phase alone

C. Light phase and dark phase

D. Dark phase alone.

Answer: C

Watch Video Solution

9. Light phase consists of

A. Two photochemical reactions

B. Two photosynthetic units

C. Two chloroplast parts

D. None of the above.

Answer: A

Watch Video Solution

10. Light energy is converted into chemical energy through the formation of

A. $NADPH_2$

B. ATP

C. ATP and $NADPH_2$

D. None of the above.

Answer: C

Watch Video Solution

11. Photophosphorylation consists of

A. Cyclic and non-cyclic phosphorylation

B. Oxidative phosphorylation

C. Substrate phosphorylation

D. None of the above.

Answer: A

Watch Video Solution

12. Stroma is the ground matrix of

A. Lysosomes

B. Oxysomes

C. Ribosomes

D. Chloroplast.

Answer: D

Watch Video Solution

13. In C_4-plants, photosystem II is absent in chloroplasts of

A. Mesophyll cells

B. Bundle sheath cells

C. Palisade cells

D. Spongy cells.

Answer: B

Watch Video Solution

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

A. Mesophyll chloroplasts

B. Bundle sheath chloroplasts

C. Guard cell chloroplasts

D. Epidermal chloroplasts.

Answer: A

Watch Video Solution

15. Which is the first CO_2 Acceptor enzyme in C_4 plants:

A. Malic acid

B. Oxalo-acetic acid

C. Pyruvic acid

D. Phosphoenol pyruvic acid.

Answer: D

Watch Video Solution

16. The first stable product of CAM cycle is

A. Starch

B. Oxalo-acetic acid

C. Sugar

D. Malic acid.

Answer: D

Watch Video Solution

17. The co-oprative photosynthesis is found in

A. C_4-plants

B. C_3-plants

C. C_2-plants

D. Succulents.

Answer: A

Watch Video Solution

18. The sugar formed at photosynthetic site is

A. Utilised

B. Stored

C. Transported

D. Assimilated.

Answer: C

Watch Video Solution

19. When chlorophyll absorbs light, it gets excited and emits (releases)

A. Oxygen

B. Water

C. Electrons

D. Energy rich compounds.

Answer: C

Watch Video Solution

20. How many maximum spectral lines are possible if electron is present in 4^{th} shell and only two atom are present in sample ?

A. Organic compounds

B. ATP from ADP and iP

C. $NADPH_2$ from $NADP$

D. None of the above.

Answer: B

Watch Video Solution

21. The excess energy of electron is used in the synthesis of ATP and the process is called

A. Oxidative phosphorylation

B. Substrate phosphorylation

C. Photophosphorylation

D. Phosphorylation

Answer: D

Watch Video Solution

22. Which of the following equations sums up photosynthetic reaction most accurately

A. $CO + H_2O \rightarrow CH_2O + O_2$

B. $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$

C. $6CO_2 + 12H_2O \rightarrow C_6H_{12}O_6 + 6O_2 + H_2O$

D. $6CO_2 + 12H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light}} C_6H_{12}O_6 + 6O_2 + 6H_2O$

Answer: D

Watch Video Solution

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

A. Stems of C_4 plants

B. Stems of C_3 plants

C. Leaves of C_4 plants

D. Leaves of C_3 plants.

Answer: C

Watch Video Solution

24. $C_{40}H_{56}$ is the empirical formula of

A. Chlorophyll b

B. Carotene

C. Xanthophyll

D. Anthocyanin.

Answer: B

Watch Video Solution

25. $C_{40}H_{56}O_2$ is an empirical formula of a

A. Xanthophyll

B. Carotene

C. Anthocyanin

D. Chlorophyll.

Answer: A

Watch Video Solution

26. Calvin cycle operates in chloroplasts. Where does Hatch-Slack pathway occur

A. Mitochondria

B. Golgi bodies

C. Chloroplasts

D. Cytoplasm.

Answer: C

Watch Video Solution

27. Emerson effect is related to

A. Decrease in photosynthesis in presence of high light intensity

B. Decrease in photosynthesis when lights of two different wavelengths are provided together

C. Increase in photosynthesis in presence of monochromatic light

D. Increase in photosynthesis when lights of two different wavelengths are provided together.

Answer: D

Watch Video Solution

28. Which of the following affect the heat of reaction?

A. Chlorophyll a

B. Chlorophyll b

C. Carotenoids

D. All the above.

Answer: A

Watch Video Solution

29. Autumnal leaf colour is due to

A. Chlorophyll a

B. Carotenoids

C. Anthocyanins

D. Betacyanin.

Answer: B

Watch Video Solution

30. Photosynthetic pigments are located in the chloroplast in

A. Intrathylakoid space

B. Thylakoid membranes

C. Intermembrane space

D. Inner membrane of envelope

Answer: B

Watch Video Solution

31. Electron carriers involved in photophosphorylation are located in

A. Outer chloroplast membrane

B. Inner chloroplast membrane

C. Stroma

D. Thylakoid membranes.

Answer: D

Watch Video Solution

32. Source of protons within the chloroplasts is

A. Water

B. Excited chlorophyll

C. Carbon dioxide

D. Rubisco.

Answer: A

Watch Video Solution

33. In cyclic photophosphorylation, the electron released by reaction centre (P_{700}) is ultimately accepted by

A. Ferredoxin

B. $NADP^+$

C. Reaction centre

D. Plastocynanin.

Answer: C

Watch Video Solution

34. The cell constant is given by

A. Plastoquinone

B. Water

C. CO_2

D. $NADP^+$

Answer: B

Watch Video Solution

35. Plants do not store carbohydrate as glucose but do so as starch because glucose

A. Is unstable

B. Attracts herbivores

C. Will change nucleic acids

D. Alters osmotic balance.

Answer: D

Watch Video Solution

36. Decline in quantum yield was noticed by Emerson at a wavelength of

A. 400-450 nm

B. 600-650 nm

C. 650-680 nm

D. more than 680 nm.

Answer: D

Watch Video Solution

37. Chemosynthetic becteria obtain energy from

A. Sun

B. Infra-red rays

C. Organic substances

D. Inorganic chemicals.

Answer: D

Watch Video Solution

38. Photosynthetic autotrophs get their energy requirement from

A. Heat

B. Light

C. Inorganic chemicals

D. Organic chemicals.

Answer: B

Watch Video Solution

39. A heterotroph is an organism that derives it's energy from

A. Organic chemicals

B. CO_2

C. Methane

D. Cyanide.

Answer: A

Watch Video Solution

40. One of the earliest experiments on photosynthesis was done in 1770 by Joseph Priestley.He demonstrated that

A. Plants foul the air

B. Animals purify the air during day time

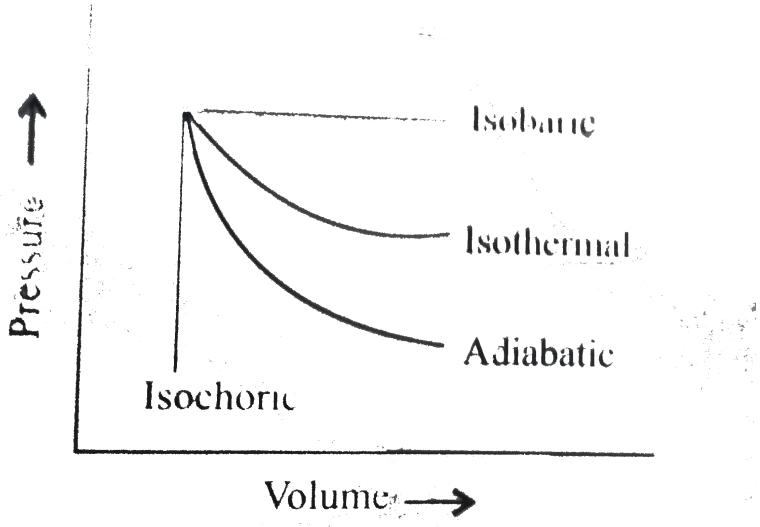
C. Plants and animals restore air for each other

D. Plants get killed in the air produced by animals.

Answer: C

Watch Video Solution

41. The pressure-volume of varies thermodynamic process is shown in graphs:



Work is the mole of transference of energy. It has been observed that reversible work done by the system is the maximum obtainable work.

$w_{rev} > w_{irr}$

The works of isothermal and adiabatic processes are different from each other.

$$w_{\text{isothermal reversible}} = -2.303nRT\log_{10}\left(\frac{V_2}{V_1}\right)$$

$$= 2.303nRT\log_{10}\left(\frac{P_2}{P_1}\right)$$

$$w_{\text{adiabatic reversible}} = C_V(T_1 - T_2)$$

Calculate work done when 1 mole of an ideal gas is expanded reversibly from $30L$ to $60L$ at a constant temperature of $300K$

A. Engelmann

B. Priestley

C. Van Niel

D. Blackman.

Answer: C

Watch Video Solution

42. Dark reactions of carbon assimilation occur in

A. Cytoplasmic matrix

B. Mitochondria

C. Leucoplasts

D. Chloroplasts.

Answer: D

Watch Video Solution

43. Stem is reduced in

A. Dark reaction

B. Non-cyclic photophosphorylation

C. Pseudocylic photophosphorylation

D. Cyclic photophosphorylation.

Answer: B

Watch Video Solution

44. Enery required for ATP synthesis in PS II comes from

A. Proton gradient

B. Electron gradient

C. Reduction of glucose

D. Oxidation of glucose

Answer: A

Watch Video Solution

45. Q. Excited pigment molecule shifts an electron in an outer orbit having

A. a) Less energy

B. b) More energy

C. c) Lesser spin

D. d) More spin.

Answer: B

Watch Video Solution

46. Chlorophyll consists of

A. A head of phytol and tail of four pyrrole rings

B. A head of linked carbons and tail of four pyrrole rings

C. A head of four pyrrole rings and tail of linked nitrogens

D. A head of four pyrrole rings and an alcoholic phytol tail.

Answer: D

Watch Video Solution

47. Immediate donor of electrons to PS I is

A. Ferredoxin

B. FeS centre

C. Plastoquinone

D. Plastocyanin.

Answer: D

Watch Video Solution

48. Photosynthesis (nourishment in light) was discovered by

A. Stephen Hales

B. Priestley

C. Ingenhousz

D. Van Mayer.

Answer: C

Watch Video Solution

49. Chlorophyll was first extracted by

A. Van Mayer

B. Pelletier and Caventou

C. Willstatter and Stoll

D. Senebier.

Answer: B

Watch Video Solution

50. The source of hydrogen for carbon assimilation is

A. $NADPH$

B. $FADH_2$

C. H_2O

D. $RuBP$

Answer: A

Watch Video Solution

51. The ratio of number of atoms present in a simple cubic, body centered cubic and face centered cubic structure are x: y : z. The numerical value of sum of x, y and z is _____ .

A. 6

B. 5

C. 4

D. 3

Answer: B

Watch Video Solution

52. Wavelength of light least effective in photosynthesis is

A. Violet

B. Blue

C. Green

D. Red.

Answer: C

Watch Video Solution

53. Plants with high light compensation point are

A. C_3 plants

B. Sun plants

C. Shade plants

D. Mesophytes.

Answer: B

Watch Video Solution

54. C_4-plants are well adapted to

A. Temperate humid climate

B. Tropical humid climate

C. Temperate dry climate

D. Tropical dry climate.

Answer: D

Watch Video Solution

55. In C_4 plant,s synthesis of sugars occurs in

A. Mesophyll cells

B. Bundle sheath cells

C. Spongy parenchyma cells

D. Palisada parenchyma cells.

Answer: B

Watch Video Solution

56. Chemistry of photosynthetic pigments was first studied by

A. Willstatter and Stoll

B. Pellebtier and Caventou

C. Priestley

D. Engelmann.

Answer: A

Watch Video Solution

57. Who discovered that green plant parts and light are essential for photosynthesis ?

A. Engelmann

B. Ingenhousz

C. Sachs

D. Priestley.

Answer: B

Watch Video Solution

58. Action spectrum of photosynthesis was first studied by

A. Blackman

B. Von Mayer

C. Engelmann

D. Boussingault.

Answer: C

Watch Video Solution

59. What is the contribution of Boussingault in the study of photosynthesis ?

A. Light is essential for photosynthesis

B. Amount of CO_2 absorbed is equal to O_2 evolved

C. CO_2 is raw material for photosynthesis

D. Oxygen is bye-product of photosynthesis.

Answer: B

Watch Video Solution

60. Who stated that in photosynthesis light energy is converted into chemical energy ?

A. R. Mayer

B. Willstatter and stoll

C. Arnon

D. Calvin.

Answer: A

Watch Video Solution

61. Which of the following does not affect light phase

A. chlorophyll

B. Water

C. Cytochrome

D. Temperature.

Answer: D

Watch Video Solution

62. Which one of the following is limiting rate of photosynthesis in nature

A. Light

B. CO_2

C. O_2

D. Both A and B

Answer: B

Watch Video Solution

63. During day time the green plants show a ratio of CO_2 consumption to CO_2 production of

A. $1:1$

B. $5:1$

C. $10:1$

D. $20:1.$

Answer: C

Watch Video Solution

64. Dry weight of leaf is maximum during

A. Morning

B. Noon

C. Afternoon

D. Night.

Answer: C

Watch Video Solution

65. Q_{10} refers to

A. Temperature quotient

B. Respiratory quotient

C. Compensation point

D. Time factor

Answer: A

Watch Video Solution

66. In PS I, the carrier that picks up electrons from P_{700} is

A. Fe protein

B. Fe-S protein

C. Fe-Cu protein

D. Fe-Mg protein.

Answer: B

Watch Video Solution

67. Which is correct for photosynthetic organs

A. Light Energy $\rightarrow$ Heat $\rightarrow$ chemical Energy

B. Chemical Energy $\rightarrow$ Light Energy $\rightarrow$ Heat

C. Heat $\rightarrow$ Light Energy $\rightarrow$ Chemical energy

D. Light Energy $\rightarrow$ Chemical energy $\rightarrow$ Heat.

Answer: D

Watch Video Solution

68. Herbicide $DCMU$ [(3-C, 3, 4-dichlorophenyl) -1, 1-dimethyl urea] kills plants due to stoppage of

A. Photophosphorylation

B. Rubisco activity

C. Electron transport

D. O_2-evolution.

Answer: D

Watch Video Solution

69. High CO_2 compensation point is found in

A. C_3 plants

B. C_4 plants

C. CAM plants

D. Lichens.

Answer: A

Watch Video Solution

70. Chloroplasts are agranal in

A. Algae

B. Bundle sheath cells of C_4 plants

C. Mesophyll cells of C_4 plants

D. Both A and B.

Answer: D

Watch Video Solution

71. Illuminated isolated chloroplasts release O_2 in the absence of CO_2. Which will increase oxygen output ?

A. H_2O

B. $NADP^+$

C. NAD^+

D. Green light.

Answer: B

Watch Video Solution

72. Rate of photosynthesis is

A. Equal to that of respiration

B. Less than that of respiration

C. Depends upon chlorophyll content

D. Faster than that of respiration.

Answer: D

Watch Video Solution

73. In an experiment on O_2 evolution by photosynthesising Hydrilla plant, a pinch of sodium bicarbonate is added to water. The rate of

photosynthesis or O_2 evolution will

A. Increase

B. Decrease

C. Stop

D. Not be affected.

Answer: A

Watch Video Solution

74. An illuminated plant is provided with $0.03\ \%\ CO_2$. The plant will

A. Die

B. Just survive

C. Show normal photosynthesis

D. Have reduced respiration.

Answer: C

Watch Video Solution

75. Photosynthesis will be highest when the plant is exposed to

A. Continuous strong light

B. Continuous weak light

C. Alternate strong and weak light

D. Intermittent light.

Answer: D

Watch Video Solution

76. Which helped in confirming that oxygen evolved in photosynthesis comes from water

A. $H_2.^{18}O$

B. $.^{14}CO^2$

C. $.^{15}NO_3$

D. $.^3H_2O.$

Answer: A

Watch Video Solution

77. Photolysis of water results in the release of

A. Excitement of water

B. Evolution of oxygen

C. Breakdown of water by light

D. Splitting of water into its ions, H^+ and OH.

Answer: C

Watch Video Solution

78. the radiant energy absorbed by carotenoids is

A. Lost as heat

B. Transferred to chlorophylls

C. Re-emitted as fluorescence or phosphorescence

D. Used to perform photochemical act.

Answer: B

Watch Video Solution

79. Which light range is most effective in photosynthesis ?

A. 450-520 nm

B. 700-760 nm

C. 660-700 nm

D. 520-560 nm.

Answer: C

Watch Video Solution

80. The product of photosynthesis is :

A. CO_2

B. H_2O

C. Glucose

D. O_2.

Answer: D

Watch Video Solution

81. The oxygen in photosynthesis is released from

A. CO_2

B. H_2O

C. Carbohydrate

D. Chlorophyll.

Answer: B

Watch Video Solution

82. The First scientist to find out the role of light in photosynthesis was

A. Ingenhousz

B. Senebier

C. Priestley

D. Sachs.

Answer: A

Watch Video Solution

83. The emperical formula/structure for chlorophyll a is

A. $C_{35}H_{72}O_5N_4Mg$

B. $C_{65}H_{70}O_6N_4Mg$

C. $C_{55}H_{72}O_5N_4Mg$

D. $C_{45}H_{70}O_6N_4Mg.$

Answer: C

Watch Video Solution

84. The process of taking in CO_2 by plants and releasing O_2 is component of

A. Transpiration

B. Respiration

C. Endosmosis

D. Photosynthesis.

Answer: D

Watch Video Solution

85. During photosynthesis O_2 is liberated by oxidation of

A. H_2O

B. CO_2

C. Phosphohlyceralbehyde

D. None.

Answer: A

Watch Video Solution

86. Photophosphorylation is the process in which

A. CO_2 and O_2 unite

B. Phosphoglyceric acid is produced

C. Aspartic acid is formed

D. Light energy is converted into chemical energy through production of ATP.

Answer: D

Watch Video Solution

87. The first step in photosynthesis is the

A. Joining of 3-carbon atom to form Glucose

B. Formation of ATP

C. Ionization of water

D. Excitement of an electron of chlorophyll by photon of light.

Answer: D

Watch Video Solution

88. when cell converts light energy into chemical energy, which of the following reaction would take place.

A. $ADP + iP = ATP$

B. $ATP - iP = ADP$

C. $AMP + iP = ADP$

D. $GDP + iP = GTP.$

Answer: A

Watch Video Solution

89. Photophosphorylation means synthesis of

A. ATP from ADP

B. $NADP$

C. ADP from ATP

D. $PGA.$

Answer: A

Watch Video Solution

90. ATP formation during photosynthesis is

A. Phosphorylation

B. Photophosphorylation

C. Oxidative phosphorylation

D. None of the above.

Answer: B

Watch Video Solution

91. The process in which water is split during photosynthesis is

A. Photolysis

B. Hydrolysis

C. Plasmolysis

D. Hemolysis.

Answer: A

Watch Video Solution

92. Besides water and light which is more essential as a raw material for food formation

A. CO_2

B. NAD

C. O_2

D. Mineral salts.

Answer: A

Watch Video Solution

93. In pigment system II, reaction centre is

A. P_{680}

B. P_{700}

C. P_{673}

D. P_{720}

Answer: A

Watch Video Solution

94. Site of light reaction.

A. Grana

B. Stroma

C. ER

D. Cytoplasm.

Answer: A

Watch Video Solution

95. Which products of Hill reaction are used in Blackman's reaction

A. Generation of ATP and $NADPH$

B. Reduction of CO_2

C. Splitting of water

D. Disintegration of plastids.

Answer: A

Watch Video Solution

96. the number of chlorophyll molecules in a quantasome is

A. 50 - 100

B. 200 - 250

C. 300 - 400

D. 500 - 600

Answer: B

Watch Video Solution

97. The process of photophosphorylation was discovered by

A. Calvin

B. Arnon

C. Priestley

D. Warburg.

Answer: B

Watch Video Solution

98. Which colour of light gives maximum absorption peak of chlorophyll a

A. Red

B. Blue

C. Green

D. Yellow.

Answer: B

Watch Video Solution

99. Two pigment system theory of photosynthesis was proposed by or Conept of evidence for existence two photosystem is

photosynthesis was given by

A. Hill

B. Blackman

C. Emerson

D. Arnon.

Answer: C

Watch Video Solution

100. Dark reaction in photosynthesis is called so because

A. It can occur in dark alone

B. It does not require direct light energy

C. It cannot occur during day time

D. It occurs more rapidly at night.

Answer: B

Watch Video Solution

101. In case of C_4-pathway

A. CO_2 combines with PGA

B. CO_2 combines with PEP

C. CO_2 first combines with $RuBP$

D. CO_2 combines with RMP.

Answer: B

Watch Video Solution

102. Which one is C_4-plant:-

A. Papaya

B. Pea

C. Potato

D. Maize/Corn/Sorghum.

Answer: D

Watch Video Solution

103. In C_4 pathway, initial carbon dioxide fixation occurs in chloroplasts of

A. Guard cells

B. Mesophyll

C. Bundle sheath

D. All the above.

Answer: B

Watch Video Solution

104. The law of limliting factors for photosynthesis was enunciated by

A. R. Hill

B. Calvin

C. Krebs

D. Blackman.

Answer: D

Watch Video Solution

105. Cell cycle was discovered by

A. Hatch and Slack

B. Calvin

C. Hill

D. Arnon.

Answer: A

Watch Video Solution

106. Which one is most efficient converter of sunlight ?

A. Sugarcane

B. Rice

C. Wheat

D. Papaya.

Answer: A

Watch Video Solution

107. Dark reaction/Calvin cycle of photosynthesis occurs in

A. Grana

B. Stroma

C. Matrix

D. Cytoplasm.

Answer: B

Watch Video Solution

108. In C_3 plants, the first stable product of photosynthesis during dark reaction is

A. PGA

B. $PGAL$

C. $RuBP$

D. Oxalo-acetic acid

Answer: A

Watch Video Solution

109. The isotope of carbon used extensively for studies in photosynthesis is

A. $._{}^{13}C$

B. $._{}^{14}C$

C. $._{}^{15}C$

D. $._{}^{16}C$

Answer: B

Watch Video Solution

110. Red drop discovered by Emerson is due to disruption of photochemical activity of

A. Carotenoids

B. PS I

C. PS II

D. Both B and C.

Answer: C

Watch Video Solution

111. Which is the first CO_2 Acceptor enzyme in C_4 plants:

A. Phosphoenolpyruvate

B. Ribulose 1, 5-bisphosphate

C. Oxalo-acetic acid

D. Phosphoglyceric acid.

Answer: A

Watch Video Solution

112. Which is the first CO_2 Acceptor enzyme in C_4 plants:

A. Phospho-enol pyruvate (PEP)

B. Ribulose 1, 5-bisphosphate $(RuBP)$

C. Phospoglyceric acid (PGA)

D. Ribulose monophosphate (RMP).

Answer: B

Watch Video Solution

113. The process of photosynthesis is

A. Reductive, exergonic and catabolic

B. Reductive, endergonic and catabolic

C. Reductive, exergonic and anabolic

D. Reductive, endergonic and anabolic.

Answer: D

Watch Video Solution

114. Nine-tenth of al photosynthesis of world (85-90%) is carried out by

A. Large trees with milions pf branches and leaves

B. Algae/photoplankton of the ocean

C. Chlorophyll containing ferns of the forest

D. Scientists in the loboratories.

Answer: B

Watch Video Solution

115. Glycolate accumulates in chloroplasts when there is

A. High CO_2

B. Bright light

C. Low temperature

D. Low CO_2

Answer: D

Watch Video Solution

116. The C_4 plants are different from C_3 plants with reference to the

A. The substance that accepts CO_2 in carbon assimilation

B. Types of end product of photosynthesis

C. The number of NADPH that are consumed in preparing sugar

D. Types of pigments involved in photosynthesis

Answer: A

Watch Video Solution

117. Which one of the following is not a limiting factor for photosynthesis

A. O_2

B. CO_2

C. Chlorophyll

D. Light.

Answer: A

Watch Video Solution

118. Moll's half leaf experiment shows

A. Unequal transpiration from two surfaces of leaf

B. CO_2 is essential for photosynthesis

C. Relation between transpiration and absorption

D. Chlorophyll is essential for photosynthesis.

Answer: B

Watch Video Solution

119. The percentage of light energy utilized for photosynthesis by higher plants is

A. 100

B. 50

C. 10

D. 1-2.

Answer: D

Watch Video Solution

120. Which of the following is least effective in photosynthesis

A. Sunlight

B. Red light

C. Blue light

D. Green light.

Answer: D

Watch Video Solution

121. Alage used by Calvin and associates for photosynthetic reserch is

or

The experimental material that has largely been responsible for the making rapiad advances in research on photosynthesis is

or

Warbug studied his effect on .

A. Chlamydomonas

B. Chlorella

C. Spinach leaf

D. Hydrilla.

Answer: B

Watch Video Solution

122. Correct equation for photosynthesis is

A. $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$

B. $6CO_2 + 6H_2O \rightarrow C_6 + H_{12}O_6 + 6O_2$

C. $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$

D. $6CO_2 + 10H_2O \rightarrow C_6H_{12}O_6 + O_2 + 4H_2O.$

Answer: C

Watch Video Solution

123. Rate of photosynthesis is independent of

A. Intensity of light

B. Duration of light

C. Quality of light

D. Temperature.

Answer: B

Watch Video Solution

124. PEP is primary CO_2 aceptor in

A. C_4-plants

B. C_3-plants

C. C_2-plants

D. Both A and B.

Answer: A

Watch Video Solution

125. Which one directly transfers electrons to $NADP^+$ during light reaction ?

A. PS I

B. PS II

C. Cytochromes

D. Plastocyanin.

Answer: A

Watch Video Solution

126. Compensation point is the value of a factor where there is

A. Beginning of photosynthesis

B. Little photosynthesis

C. Photosynthesis equal to rate of respiration

D. Neither photosynthesis nor respiration.

Answer: C

Watch Video Solution

127. Q. Maize, sugarcane and some other tropical plants have high efficiency of CO_2 fixation because they operate

A. a) Calvin cycle

B. b) Hatch-Slack cycle

C. c) TCA cycle

D. d) PP pathway.

Answer: B

Watch Video Solution

128. Which one of the following is the common storage product of photosynthesis

A. Protein

B. Fat

C. Starch

D. Sucrose/glucose.

Answer: C

Watch Video Solution

129. What is true for photosynthesis ?

A. Both carbon dioxide and water are oxidised

B. Both carbon dioxide and water are reduced

C. Carbon dioxide is oxidised and water reduced

D. Carbon dioxide is reduced and water oxidised.

Answer: D

Watch Video Solution

130. Leaves are green because they

A. Absorb green light

B. Do not absorb but reflect green light

C. Utilise green light

D. Absorb and reflect green light.

Answer: B

Watch Video Solution

131. Cyclic photophosphorylation results in the formation of

A. $NADPH$

B. ATP and $NADPH$

C. ATP, $NADPH$ and O_2

D. ATP only.

Answer: D

Watch Video Solution

132. Bacterial photosynthesis involves.....

A. PS I

B. PS II

C. Both PS I and PS II

D. None of them.

Answer: A

Watch Video Solution

133. Algae often float on the surface of water during day but sink down during night due to

A. Evolution and trapping of oxygen bubbles during the day in their photosynthesis

B. Becoming light as they consume most of their food in the night

C. Warming action of sun during the day

D. Release of absorbed air by warming of water.

Answer: A

Watch Video Solution

134. Both respiration and photosynthesis require

A. Sunlight

B. Green cells

C. Cytochromes

D. Organic substarate.

Answer: C

Watch Video Solution

135. Isotopes popularly know to have been used in the study of photosynthesis are

or

Which of the following isotope of carbon was by Calvin to trace the path of carbon in photosynthesis

A. $._{}^{11}C$ and $._{}^{32}P$

B. $._{}^{15}C$ and $._{}^{32}P$

C. $._{}^{16}C$ and $._{}^{15}N$

D. $._{}^{14}C$ and $._{}^{18}O$.

Answer: D

Watch Video Solution

136. In C_4 plants synthesis of sugars/finalÇO_2 fixation occurs in

A. Palisade cells

B. Spongy cells

C. Undifferentiated mesophyll cells

D. Bundle sheath cells

Answer: D

Watch Video Solution

137. The products of the photochemical reaction are :

A. O_2, ATP and $NADPH$

B. O_2

C. ATP and $NADPH$

D. Organic compounds especially carbohydrates.

Answer: A

Watch Video Solution

138. In photorespiration the substrate is

A. Phosphoglyceric acid

B. Glycolate

C. Serine

D. Glycine.

Answer: B

Watch Video Solution

139. Carbon dioxide joins the photosynthetic pathway in

A. PS I

B. PS II

C. Light reaction

D. Dark reaction.

Answer: D

Watch Video Solution

140. Nobel Prize was awarded to the scientist for discovering the pathway of carbon assimilation

A. Watson

B. Krebs

C. Calvin

D. Parnas.

Answer: C

Watch Video Solution

141. A photosynthesis organism which does not release oxygen is

A. Blue-green alga

B. Green sulphur bacterium

C. Green alga

D. Algal component of lichen.

Answer: B

Watch Video Solution

142. PS II contains a non-chlorophyllous pigment in blue-green algae

A. β-carotene

B. Zeaxanthin

C. Phycocyanin

D. Cytochrome c.

Answer: C

Watch Video Solution

143. The evidence that during photosynthesis oxygen comes from water is

A. Photosynthesis bacteria employ H_2S and CO_2 to form carbohydrates, water and sulphur

B. Isolated illuminated chloroplasts release oxygen if provided with potassium ferrocyanide

C. Isotopic $.^{18}O$ provided as $H_2.^{18}O$ appears as $.^{18}O_2$ liberated in photosynthesis

D. All the above.

Answer: D

Watch Video Solution

144. Formation of ATP in photosynthesis and respiration in an oxidation process which utilises the energy from:-

A. Cytochromes

B. Ferredoxin

C. Electrons

D. Carbon dioxide.

Answer: C

Watch Video Solution

145. Photosynthetic pigments are located in the chloroplast in

A. Thylakoid membranes

B. Plastoglobules

C. Matrix

D. Chloroplast envelope.

Answer: A

Watch Video Solution

146. Which "photosythetic bacteria" possess both PS I and PS II

A. Purple sulphur bacteria

B. Cyanobacteria

C. Purple nonsulphur bacteria

D. Green sulphur bacteria.

Answer: B

Watch Video Solution

147. C_4 plants are also known as

A. Calvin type

B. Calvin-Bassham type

C. Hatch and Slack type

D. Emerson type.

Answer: C

Watch Video Solution

148. In C_4 plants, Calvin cycle operations in

A. Stroma of bundle sheath chloroplasts

B. Grana of bundle sheath chloroplasts

C. Grana of mesophyll chloroplasts

D. Stroma of mesophyll chloroplasts

Answer: A

Watch Video Solution

149. Greatest producers of organic matter are

A. Crop plants

B. Forests

C. Plants of the land area

D. Phytoplankton of oceans.

Answer: D

Watch Video Solution

150. C_4 Plants belong to

A. Gramineae

B. Monocots

C. Dicots

D. Both monocots and dicots.

Answer: D

Watch Video Solution

151. Tropical plant like sugarcane show high efficiency of CO_2 fixation because of ,

A. Calvin pathway

B. EMP pathway

C. Hatch and Slack pathway

D. TCA cycle.

Answer: C

Watch Video Solution

152. Which is sensitive to longer wavelengths of light

A. PS II

B. PS I

C. Phosphorylation

D. Photolysis.

Answer: B

Watch Video Solution

153. The size of chlorophyll molecule is

A. Head $15 \times 15\tilde{A}...$, tail $25\tilde{A}...$

B. Head $20 \times 20\tilde{A}...$ tail $25\tilde{A}...$

C. Head $15 \times 15\tilde{A}...$, tail $20\tilde{A}...$

D. Head $10 \times 12\tilde{A}...$, tail $15\tilde{A}...$

Answer: C

Watch Video Solution

154. Dark reactions of photosynthesis occur in

A. Granal thylakoid membranes

B. Stromal lamella membranes

C. Stroma outside photosynthetic lamellae

D. Periplastidial space.

Answer: C

Watch Video Solution

155. The first experiment on photosynthesis in flashing light were carried out by

A. Hill

B. Calvin

C. Blackman

D. Emerson and Arnold.

Answer: D

Watch Video Solution

156. Kranz anatomy is typical of

A. (a) C_4 plants

B. (b) C_3-plants

C. (c) C_2-plants

D. (d) CAM plants.

Answer: A

Watch Video Solution

157. Pigment system I performs independently

(a) Non-cyclic photophosphorylation

(b) Cyclic photophosphorylation

(c) Oxidative phosphorylation

(d) Photolysis

A. Non-cyclic photophosphorylation

B. Cyclic photophosphorylation

C. Oxidative phosphorylation

D. Photolysis.

Answer: B

Watch Video Solution

158. Algae employed by Calvin et al in experiments on photosynthesis belong to

A. Euglena and Scendesmus

B. Chara

C. Chlamydomonas and Chlorella

D. Chlorella and Scenedesmus.

Answer: D

Watch Video Solution

159. Chlorophyll b is

A. $C_{54}H_{70}O_6N_4Mg$

B. $C_{55}H_{70}O_6N_4Mg$

C. $C_{55}H_{72}O_5N_4Mg$

D. $C_{45}H_{72}O_5N_4Mg.$

Answer: B

Watch Video Solution

160. Cyclic photophosphorylation is carried out by

(a) P S I only

(b) P S II only

(c) Both a and b

(d) Photolysis and P S II

A. PS I only

B. PS II only

C. Both A and B

D. Photolysis and PS II.

Answer: A

Watch Video Solution

161. Maximum O_2 evolution occurs from

A. Forests

B. Marine phytoplankton

C. Crops

D. Land mass.

Answer: B

Watch Video Solution

162. Which thechnique has helped in investigation of Calvin cycle

A. X-ray crystallography

B. X-ray technique

C. Radioactive isotope technique

D. Intermittent light.

Answer: C

Watch Video Solution

163. Which one of the following does not perform C_4 photosynthesis ?

A. Saccharum

B. Zea mays

C. Triticum aestivum

(= T. vulgare)/(Crotalaria)

D. Euphorbia milli (=E. splendens).

Answer: C

Watch Video Solution

164. During monsoon, the rice crop of eastern states of India shows lesser yield due to limiting factor of

A. CO_2

B. Light

C. Temperature

D. Water.

Answer: B

Watch Video Solution

165. Photosynthetic enhancement with flashing light was first observed by

A. Benson and Calvin

B. Hill and Calvin

C. Hatch and Slack

D. Emerson and Arnold.

Answer: D

Watch Video Solution

166. Path of dark reaction of photosynthesis was traced through the use of

A. $._{}^{32}P$

B. $._{}^{14}CO_2$

C. $._{}^{18}O_2$

D. X-rays.

Answer: B

Watch Video Solution

167. Two chief functions of leaves are:

A. Transpiration and photosynthesis

B. Respiration and photosynthesis

C. Respiration and digestion

D. Respiration and transpiration.

Answer: A

Watch Video Solution

168. At high oxygen concentration, the rate of photosynthesis decreases due to

A. Warburg effect

B. Pasteur effect

C. Emerson effect

D. Richmond Lang effect.

Answer: A

Watch Video Solution

169. Quantosomes occur in

A. Chloroplasts/Grana

B. Mitochondria

C. Nucleus

D. Lysosmes.

Answer: A

Watch Video Solution

170. Which is the most effective wave length of light for photosynthesis ?

A. Green

B. Violet

C. Red

D. Yellow.

Answer: C

Watch Video Solution

171. The enzyme that catalyses intitial carbon dioxide fixation in C_4 plants is

A. $RuBP$ carboxylese

B. PEP carboxylase

C. Carbonic anhydrase

D. Carboxydismutase.

Answer: B

Watch Video Solution

172. Ferredoxin is a constituent of

A. PS I

B. PS II

C. Hill reaction

D. P_{680}.

Answer: A

Watch Video Solution

173. Photo oxidation of water (in photosynthesis) occurs in association of

A. Cytochrome B_6

B. Plastocyanin

C. PS II

D. PS I.

Answer: C

Watch Video Solution

174. Photosystem II occurs in

A. Stroma

B. cytochrome

C. Grana thylakoids

D. Mitochondrial surface.

Answer: C

Watch Video Solution

175. All plastids have essentially the same structure because

A. Perform the same function

B. Store food material like starch, fat and protein

C. Occucr in aerial parts

D. Can transform from one form to another.

Answer: D

Watch Video Solution

176. Chlorophyll a occurs in

A. All photosunthetic autotrophs

B. In all higher plants

C. All oxygen liberating autotrophs

D. All plants except fungi.

Answer: C

Watch Video Solution

177. Bacterial photosynthesis differs from that of higher plants in

A. Not liberating oxygen

B. Non-requirement of light

C. Non-fixation of energy

D. Requirement of host organism.

Answer: A

Watch Video Solution

178. ATP is :

A. Adenine triphosphate

B. Adenosine tetraphosphate

C. Adenosine triphosphate

D. Asdenine tetraphosphate.

Answer: C

Watch Video Solution

179. For synthesis of a molecule of glucose in C_4 plant the requirement of ATP and NADPH is respectively

A. 15 and 10

B. 33 and 22

C. 12 and 8

D. 18 and 12.

Answer: D

Watch Video Solution

180. Food is transported to different parts of plant through

A. Xylem

B. Phloem

C. Pith

D. Cortex.

Answer: B

Watch Video Solution

181. The translocation of sugars in angiosperms occurs in the form of

A. Glucose

B. Maltose

C. Starch

D. Sucrose.

Answer: D

Watch Video Solution

182. Which one dies first when a ring of bark is removed

A. Shoot

B. Root

C. None

D. Both shoot and root die simultaneously.

Answer: B

Watch Video Solution

183. Complete girdling ultimately kills the tree due to

A. Starvation of root

B. Stoppage of photosynthesis

C. Non-movement of minerals

D. Non-movement of water.

Answer: A

Watch Video Solution

184. The loss of which will harm the tree most

(a) Bark

(b) Half the leaves

(c) Half the branches

(d) All the leaves

A. Bark

B. Half the leaves

C. Half the branches

D. All the leaves.

Answer: A

Watch Video Solution

185. Mass flow hypothesis was put forward by

(a) Swanson

(b) Munch

(c) Curtis

(d) De Vries

A. Swanson

B. Munch

C. Curtis

D. De Vries.

Answer: B

Watch Video Solution

186. Oxygen containing carotenoids are

A. Carotenes

B. Xanthophylls

C. Phycobilins

D. Anthocyanins.

Answer: B

Watch Video Solution

187. Which products formed during the light reaction of photosynthesis are used to drive the dark reaction ?

A. PS I produces strong oxidant while PS II a strong reductant

B. PS I produces strong reductant $NADPH$ while PS II a strong oxidant

C. PS I emits electrons for PS II

D. PS I produces ATP which is not formed

Answer: B

Watch Video Solution

188. When day light hours are increased, the rate of photosynthesis

(a) Increases

(b) Decreases

(c) Remains unchanged

(d) None of the above

A. Increases

B. Decreases

C. Remains unchanged

D. None of the above.

Answer: C

Watch Video Solution

189. Photosynthesis is

A. Photochemical process

B. Chemical process

C. Oxidation process

D. Reduction process.

Answer: D

Watch Video Solution

190. The scientists to discover photophosphorylation was

A. Arnon

B. Hill

C. Willstatter and Stoll

D. Park and Biggins.

Answer: A

Watch Video Solution

191. ATP formation during photosynthesis is

A. Phosphorylation

B. Photophosphorylation

C. Oxidative phosphorylation

D. Photolysis.

Answer: B

Watch Video Solution

192. PS II performs

A. Reduction of CO_2

B. Photolysis of water

C. Liberation of energy

D. Formation of water.

Answer: B

Watch Video Solution

193. kranz anatomy is found in case of

A. Leaves

B. Stem

C. Flower

D. Seed.

Answer: A

Watch Video Solution

194. Photosynthate is translocated through

A. Sieve tubes/phloem cells

B. Tracheids

C. Xylem vessels

D. Latex ducts.

Answer: A

Watch Video Solution

195. Photorespiration occurs in

A. Ribosomes

B. Mitochondria

C. Peroxisomes

D. Lysosomes.

Answer: C

Watch Video Solution

196. CAM occurs in

A. Thin green leaves with reticulate venation

B. Thin green leaves with parallel venation

C. Thin coloured leaves

D. Fleshy green leaves.

Answer: D

Watch Video Solution

197. Maximum solar energy is trapped by:-

A. Planting trees

B. Cultivating crops

C. Growing algea in tanks

D. Growing grasses.

Answer: C

Watch Video Solution

198. A photosynthesising plant is releasing $.^{18}O$ more than the normal. The plant must have been supplied with

A. O_3

B. H_2O with $.^{18}O$

C. CO_2 with $.^{18}O$

D. $C_6H_{12}O_6$ with $.^{18}O$.

Answer: B

Watch Video Solution

199. In photosynthesis

A. ATP is formed in light reaction and glucose in dark reaction

B. Both ATP and glucose are produced in dark reaction

C. Both ATP and glucose are produced in light reaction

D. Both ATP and glucose are formed in light and dark.

Answer: A

Watch Video Solution

200. Two types of photosynthetic pigments are

A. Chlorophyll a and carotenoids

B. Chlorophyll b and carotenoids

C. Chlorophylls and carotenoids

D. Chlorophyll a and chlorophyll b.

Answer: C

Watch Video Solution

201. Structurally, what is the difference between chlorophyll a and b?

A. $-CH_3$ of chlorophyll a is replaced by $-CHO$ in clorophyll b.

B. Chlorophyll a ais linear while chlorophyll b is branched

C. Chlorophyll a has no Mg

D. All the above.

Answer: A

Watch Video Solution

202. Light energy is used in photosynthesis for

A. Breakdown of H_2O

B. Breakdown of CO_2

C. Activation of chlorophyll

D. Breakdown of $C_6H_{12}O_6$.

Answer: C

Watch Video Solution

203. Dark reaction of photosynthesis is

A. Hill reaction

B. Calvin cycle

C. Cyclic photophosphorylation

D. Non-cyclic photophosphrylation.

Answer: B

Watch Video Solution

204. If plants stop photosynthesis which gas will disappear

A. CO_2

B. N_2

C. O_2

D. NH_3

Answer: C

Watch Video Solution

205. Which plant shows chloroplast dimorphism

A. Wheat

B. Rice

C. Sugar Beet

D. Sugarcane/C_4 plant.

Answer: D

Watch Video Solution

206. Cytochromes are component of ETC and act as

A. O_2 acceptors

B. H_2 acceptors

C. Electron acceptors

D. H_2O acceptors.

Answer: C

Watch Video Solution

207. Pigment acting as a reaction centre during photosynthesis is

A. Carotene

B. Phytochrome

C. P_{700}

D. Cytochrome.

Answer: C

Watch Video Solution

208. Which one occurs both during cyclic and non-cycclic modes of photophosphorylation

A. Involvement of both PS I and PS II

B. Formation of ATP

C. Release of O_2

D. Formation of $NADPH$.

Answer: B

Watch Video Solution

209. Chlorophylls absorb visible light of wavelengths

A. 400-500 nm only

B. 300-400 nm only

C. 600-800 nm only

D. 400-500 nm and 600-700 nm.

Answer: D

Watch Video Solution

210. During dark reaction for fixation of Carbon, the three carbon atoms of each molecule of 3-PGA are derived from

A. $RuBP$ only

B. CO_2 only

C. $RuBP + CO_2$

D. $RuBP + CO_2 + PEP.$

Answer: C

Watch Video Solution

211. Three organelles are involved in photorespiration which are

(a) Mitochondria, chloroplasts and ribosomes

(b) Mitochondria, peroxisomes and chloroplasts

(c) Mitochondria, nucleus and ribosomes

(d) Mitochondria, peroxisomes and glyoxysomes

A. Mitochondria, chloroplasts and ribosomes

B. Mitochondria, peroxisomes and chloroplasts

C. Mitochondria, nucleus and ribosomes

D. Mitochondria, peroxisomes and glyoxysomes.

Answer: B

Watch Video Solution

212. C_4 cycle is connected with

(a) Respiration

(b) Photosynthesis

(c) Transpiration

(d) Growth and development

A. Respiration

B. Photosynthesis

C. Transpiration

D. Growth and development.

Answer: B

Watch Video Solution

213. First product of photorespiration is

A. Phosphoglycolate

B. Glycolate

C. Glycine

D. None of the above.

Answer: A

Watch Video Solution

214. Solar energy is converted into ATP in

or

Light energy is converted into chemical energy in the presence of

(a) Chloroplasts

(b) Pyremoids

(c) Ribosomes

(d) Mesosomes

A. Chloroplasts

B. Pyremoids

C. Ribosomes

D. Mesosomes

Answer: A

Watch Video Solution

215. Photorespiration is characteristic of

A. (a) C_3 plants

B. (b) C_4 plants

C. (c) CAM plants

D. (d) All the above

Answer: A

Watch Video Solution

216. Which one is C_4-plant:-

A. Maize

B. Sugarcane

C. Sorghum

D. All the above.

Answer: D

Watch Video Solution

217. Which is correct about chlorophylls a and b in leaves of higher plants

A. Both are present in equal proportion

B. Chlorophyll a is more than chlorophyll b

C. Chlorophyll a is less than chlorophyll b

D. Chlorophyll b is ten times more than chlorophyll a.

Answer: B

Watch Video Solution

218. Who demonstrated for the first time that in photosynthesis, oxygen is evolved from water

A. Ruben and kamen

B. Calvin

C. R. Hill

D. Govindji.

Answer: C

Watch Video Solution

219. Quantasomes are found in

A. Cristae

B. Plasmalemma

C. Nuclear ebvelope

D. Thylakoids.

Answer: D

Watch Video Solution

220. Liberation of oxygen when green cells in water are exposed to sunlight in presence of suitable acceptor is

A. Emerson effect

B. Blackman's reaction

C. Hill's reaction

D. Arnon reaction.

Answer: C

Watch Video Solution

221. Balance between CO_2 and O_2 is maintained by

A. Transpiration

B. Photosynthesis

C. Photorespiration

D. C_4 pathway.

Answer: D

Watch Video Solution

222. ATP synthesis during light reaction is

A. Oxidative phosphorylation

B. Photolysis

C. Photophosphorylation

D. Phosphorylation

Answer: C

Watch Video Solution

223. Calvin cycle is

A. Dpendent upon light

B. Independent of light

C. Supported by light

D. Hindered by light.

Answer: C

Watch Video Solution

224. Both respiration and photosynthesis require

A. ATP

B. Quinone

C. Cytochrome

D. Chlorophyll.

Answer: A

Watch Video Solution

225. Photosynthesis is a process in which

A. ATP is generated

B. $NADH$ is reduced to NAD

C. Oxidative phosphorylation occurs

D. CO_2 is reduced.

Answer: D

Watch Video Solution

226. In C_4 plants, the carbon dioxide occurs in

A. Transudion tissue

B. Palisade tissue

C. Cortex of stem

D. Spongy mesophyll and bundle sheath cells.

Answer: D

Watch Video Solution

227. Who first of all indicated that water is electron donor in photosynthesis ?

A. Arnon

B. Calvin

C. Blakeslee

D. Van Niel.

Answer: D

Watch Video Solution

228. Photosystem has main light harvesting pigments

A. (a) Chlorophyll a-660, chl a-670, chl a-680, chl a-690, chl a-700

B. (b) Chlorophyll a-660, chl b, chl a-700, chl a-800 and carotenoid

C. (b) Chlorophyll a-680, chl a-685, chl a-695 and xanthophyll

D. (d) Chlorophyll a-700, chl a-800, chl-b, chl a-685 and phycobilins.

Answer: A

Watch Video Solution

229. In C_4 plants, chloroplasts are also found in

A. Spongy paranchyma

B. Epidermal cells

C. Guard cells

D. Bundle sheath cells

Answer: D

Watch Video Solution

230. Carbon dioxide assimilation occurs through

(a) Krebs cycle

(b) Calvin cycle

(c) Glycolysis

(d) Anaerobic respiration

A. Krebs cycle

B. Calvin cycle

C. Glycolysis

D. Anaerobic respiration.

Answer: B

Watch Video Solution

231. Chlorophyll a has

A. (a) $-CHO$ group

B. (b) $-COOH$ group

C. (c) $-CH_3$ group

D. (d) No functional group

Answer: C

Watch Video Solution

232. C_4 cycle was discovered in

A. Groundnut

B. Sugarcane

C. Chrysanthemum

D. Apple.

Answer: B

Watch Video Solution

233. Photorespiration is favoured by

A. High oxygen and low carbon dioxide

B. High carbon dioxide and low oxygen

C. High temperature and low oxygen

D. High humidity and temperature.

Answer: A

Watch Video Solution

234. How many Calvin cycle form one hexose molecule

A. 2

B. 4

C. 6

D. 8

Answer: C

Watch Video Solution

235. Chlorophyll is soluble in

A. Water

B. Organic solvents

C. Both A and B

D. None of the above.

Answer: B

Watch Video Solution

236. Constituents of pigment system I are located on

A. Granal thylakoids

B. Stromal thylakoids

C. Outer surface of granal and stromal thylakoids

D. Stroma.

Answer: C

Watch Video Solution

237. Thylakoids possess photosynthetic units called

A. Quantasomes

B. Glyoxysomes

C. Polysomes

D. Ribosomes.

Answer: A

Watch Video Solution

238. Chlorophyll consists of

A. Porphyrin head and phytol tail

B. Phosphate head and porphyrin tail

C. Phytol head and porphyrin tail

D. Porphyrin head and phosphate tail.

Answer: A

Watch Video Solution

239. Enzymes PEP carboxylase and $RuBP$ carboxylase are located in chloroplasts of

A. (A) C_3 plants

B. (B) CAM plants

C. (C) C_4 plants

D. (D) Both B and C.

Answer: D

Watch Video Solution

240. Non-cyclic photophosphorylation is performed by

A. Dark reaction

B. PS I

C. PS II

D. Both B and C.

Answer: D

Watch Video Solution

241. Calvin cycle occurs in

A. Cytoplasm

B. Mitochondria

C. Glyoxysomes

D. Chloroplasts.

Answer: D

Watch Video Solution

242. Calvin cycle involves

A. Oxidative carboxylation

B. Reductive carboxylation

C. Phosphrylation

D. Oxidative phosphorylation.

Answer: B

Watch Video Solution

243. Plants purify air during

A. Photosynthesis

B. Respiration

C. Transpiration

D. Desiccation.

Answer: A

Watch Video Solution

244. C_4 cycle is

A. Adjunct to Calvin cycle

B. Independent cycle

C. With high $RuBP$ carboxylase efficiency

D. With PEP carboxylase in bundle sheath cells.

Answer: A

Watch Video Solution

245. Element essential for photolysis of water is

A. Nitrogen

B. Oxygen

C. Chlorine

D. Carbon.

Answer: C

Watch Video Solution

246. Supply end in solute transport is

A. Root

B. Stem

C. Green leaves and storage organs

D. Xylem and phloem.

Answer: C

Watch Video Solution

247. Photorespiration occurs in

A. Green photosynthetic parts

B. All living cells

C. Mitochondria

D. Root.

Answer: A

Watch Video Solution

248. Photorespiration is favoured by

A. Temperature

B. Light intensity

C. $CO_2$and O_2

D. All the above.

Answer: D

Watch Video Solution

249. Chlorophyll-α molecule at its carbon atom 3 of the pyrrole ring-II has one of the following

A. Methyl group

B. Aldehyde group

C. Carboxyl group

D. Magnesium.

Answer: A

Watch Video Solution

250. ATP synthesis is endergonic process. Its mechanism of formation both in chloroplast and mitochondria is best explained by

A. Chlodny-Went model

B. Chemi-osmotic theory of Mitchell

C. Munch's mass flow theory

D. Relay pump theory fo Godlewski.

Answer: B

Watch Video Solution

251. Warburg effect is decrease in the rate of photosynthesis at

A. Low carbon dioxide concentration

B. High oxygen content

C. High carbon dioxide concentration

D. Both A and B.

Answer: B

Watch Video Solution

252. C_4 Plants differ from C_3 plants with respect to

(a) First product

(b) Substrate which accepts carbon dioxide

(c) Number of A T P molecules consumed

(d) All the above

A. First product

B. Substrate which accepts carbon dioxide

C. Number of ATP molecules consumed

D. All the above.

Answer: D

Watch Video Solution

253. C_4 pathway of CO_2 fixation was discovered by

A. Blackman

B. Hatch and Slack

C. Emerson and Arnold

D. Arnon.

Answer: B

Watch Video Solution

254. Photooxidation is

A. Photorespiration

B. Photolysis

C. Light and oxygen induced break down

D. All the above.

Answer: C

Watch Video Solution

255. Which metal ion is a constituent of chloro- phyll

A. Cu

B. Mg

C. Fe

D. Ni.

Answer: B

Watch Video Solution

256. $RuBisCO$ content of chloroplast is

A. $20\ \%$

B. $5\ \%$

C. $11\ \%$

D. $16\ \%$.

Answer: D

Watch Video Solution

257. which one of the following elements is required for photosynthesis oxygen evolution

A. Fe

B. Zn

C. Co

D. Mn

Answer: B

Watch Video Solution

258. C_4 Plants have higher net photosynthesis rate as they have

A. No photorespiration

B. PEP as CO_2 acceptor

C. Kranz anatomy

D. Photosynthesis even at low light intensity.

Answer: A

Watch Video Solution

259. Action spectrum of photosynthesis was first studied by

A. Engelmann

B. Calvin

C. Arnon

D. Hill.

Answer: A

Watch Video Solution

260. Accessory photosynthetic pigments in most green plants are

A. Engelmann

B. Calvin

C. Arnon

D. Hill.

Answer: B

Watch Video Solution

261. Primary carboxylation occurs in C_3 and C_4 plants with the help of

A. PEP carboxylase and pyruvate carboxylase

B. PEP carboxylase and $RuBP$ carboxylase

C. $RuBP$ carboxylase and PEP carboxylase

D. $RuBP$ carboxylase and pyruvate carboxylase.

Answer: C

Watch Video Solution

262. Terms apoplast and symplast were first used by

A. Munch

B. Clark

C. Fisher

D. Dixon.

Answer: A

Watch Video Solution

263. The specific function of light energy in the proess of photosynthesis is to

A. Reduction of CO_2

B. Activate other molecules

C. Split water molecules

D. None of the above.

Answer: C

Watch Video Solution

264. C_4 Plants differ from C_3 plants with respect to

(a) First product

(b) Substrate which accepts carbon dioxide

(c) Number of A T P molecules consumed

(d) All the above

A. Number of $ATPs$ consumed per hexose molecule

B. Type of end product

C. Type of pigments

D. Substrate for CO_2 in carbon assimilation.

Answer: A

Watch Video Solution

265. Main pigment involved in transfer of electrons in photosynthesis is

A. Phytochrome

B. Cytochrome

C. FAD

D. Both A and B.

Answer: B

Watch Video Solution

266. Enzyme catalase occurs in

A. Peroxisomes

B. Chloroplasts

C. Lysosomes

D. Vacuoles.

Answer: A

Watch Video Solution

267. Chloroplasts are agranal in

A. C_3 plants

B. Succulents

C. C_4 plants

D. Hydrophytes.

Answer: C

Watch Video Solution

268. The wavelength of light most absorbed during photosynthesis is

A. 700 nm

B. 660 nm

C. 550 nm

D. 440 nm.

Answer: B

Watch Video Solution

269. Which one is required for photosynthetic evolution of oxygen ?

A. Cu

B. Fe

C. Zn

D. $Mn.$

Answer: D

Watch Video Solution

270. Pigments of PS I occur in

A. Appressed part of granal thylakoids

B. Stromal thylakoids and non-appressed parts of granal thylakoids

C. Both appressed and non-appressed parts of granal thylakoids

D. Stroma

Answer: B

Watch Video Solution

271. Which factor is not limiting in normal conditions for photosynthesis

A. (a) Chlorophyll

B. (b) Light

C. (c) Water

D. (d) CO_2

Answer: A

Watch Video Solution

272. Protochlorophyll differs from chlorophyll in lacking

(a) 4 hydrogen atoms in two pyrrole rings

(b) 2 hydrogen atoms in one of its pyrrole rings

(c) 2 hydrogen atoms in two pyrrole rings

(d) 1 hydrogen atom in one pyrrole ring

A. 4 hydrogen atoms in two pyrrole rings

B. 2 hydrogen atoms in one of its pyrrole rings

C. 2 hydrogen atoms in two pyrrole rings

D. 1 hydrogen atom in one pyrrole ring.

Answer: B

Watch Video Solution

273. Photolysis of water is associated with :

A. Reduction of $NADP^+$

B. Oxidation of $NADP$

C. Oxidation of FAD

D. None of the above.

Answer: A

Watch Video Solution

274. Number of cell organells involved in photorespiration is

A. One

B. Two

C. Three

D. Four.

Answer: C

Watch Video Solution

275. Photosynthetic synthesis of carbohydrates uses CO_2 and

A. Water in the presence of sunlight with the help of chlorophyll

B. Water in the presence of energy

C. Water with the help of chlorophyll

D. Presence of sunlight.

Answer: A

Watch Video Solution

276. Photosynthesis occurs in

(a) Leaves

(b) Leaf cells

(c) Plants

(d) Chloroplasts

A. Leaves

B. Leaf cells

C. Plants

D. Chloroplasts.

Answer: D

Watch Video Solution

277. Maximum photosynthesis occurs in

(a) Blue light

(b) Red light

(c) Green light

(d) White light

A. Blue light

B. Red light

C. Green light

D. White light

Answer: D

Watch Video Solution

278. Special feature of C_4 plants is

(A) Thin cuticle

(B) Multilayered epidermis

(C) Kranz anatomy

(D) Both A and B

A. Thin cuticle

B. Multilayered epidermis

C. Kranz anatomy

D. Both A and B.

Answer: C

Watch Video Solution

279. Which of the following contains copper ?

A. Quinone

B. Plastoquinone

C. Plastocyanin

D. Cyt b_5.

Answer: C

Watch Video Solution

280. Condition favouring cyclic photophosphorylation is

(a) Anaerobic environment

(b) Aerobic and low light intensity

(c) Aerobic and optimum light

(d) Anaerobic and low light intensity

A. Anaerobic environment

B. Aerobic and low light intensity

C. Aerobic and optimum light

D. Anaerobic and low light intensity.

Answer: B

Watch Video Solution

281. Wavelength of visible light/PAR is

A. 200-400 nm

B. 400-700 nm

C. 700-900 nm

D. 100-200 nm.

Answer: B

Watch Video Solution

282. The pigment present universally in all green oxygenic plants is

A. Chlorophyll a

B. Chlorophyll b

C. Chlorophyll c

D. Chlorophyll d.

Answer: A

Watch Video Solution

283. Carbon dioxide is fixed in

A. Light reaction

B. Dark reaction

C. Aerobic respiration

D. Anaerobuc respiration.

Answer: B

Watch Video Solution

284. The direction of the conduction of food through phloem is

A. From below upwards

B. From tip to bottom

C. From leaves to roots

D. Phloem never conducts food.

Answer: C

Watch Video Solution

285. In photosynthesis, oxygen is liberated during

A. Hydrolysis of carbohydrates

B. Breakdown of proteins

C. Reduction of CO_2

D. Hydrolysis of water.

Answer: D

Watch Video Solution

286. Radioactive tracer studies with $.^{14}C$ have shown that

A. Phloem transports organic nutrients

B. Phloem transports inorganic nutrients

C. Xylem transports inorganic nutrients

D. Xylem transport organic nutrients.

Answer: A

Watch Video Solution

287. Light reaction of photosynthesis is also called

A. Calvin cycle

B. Hill reaction

C. TCA cycle

D. All the above.

Answer: B

Watch Video Solution

288. Protoplasmic streaming theory of translocation of organic solutes was first proposed by

A. Van der Honert

B. Cany and Thaine

C. De Vries

D. Curtis.

Answer: C

Watch Video Solution

289. In Maize, mesophyll cells perform photosynthetic cycle

A. C_4

B. C_3

C. C_2

D. C_1.

Answer: A

Watch Video Solution

290. Three carbons of phosphoglyceric acid formed during carbon fixation are derived from

A. $PEP + CO_2$

B. $RuBP$

C. CO_2

D. $RuBP + CO_2$.

Answer: D

Watch Video Solution

291. Ferredoxin is

A. Phenol

B. Protein

C. Fat

D. Carbohydrate.

Answer: B

Watch Video Solution

292. Green plants do not give out CO_2 during day time because they

A. Store the same

B. Respire very slowly

C. Do not respire

D. Consume it in photosynthesis.

Answer: D

Watch Video Solution

293. Cytochrome b_6 and cytochrome 'f' occur in

A. Ribosomes

B. Mitochondria

C. Chloroplasts

D. Lysosomes.

Answer: C

Watch Video Solution

294. Match the items of column I and column II

	Column I		*Column II*
a	Mitchell	*p*	Steps of dark reaction of photosynthesis
b	Gibbs	*q*	Photophosphorylation
c	Arnon	*r*	Concept of free enrgy
d	Calvin	*s*	Chemiosmotic hypothesis
–	–	*t*	Mass flow hypothesis

A. a-s, b-t, c-r, d-q

B. a-s, b-r, c-p, d-q

C. a-r, b-s, c-p, d-q

D. a-s, b-r, c-q, d-p.

Answer: D

Watch Video Solution

295. One of the following is a C_4 plant

A. Sugarcane

B. Tomato

C. Mango

D. Apple.

Answer: A

Watch Video Solution

296. Fixation of one molecule of Co_2 through Calvin cycle requires

A. $3ATP + 1NADPH_2$

B. $3ATP + 2NADPH_2$

C. $2ATP + 3NADPH_2$

D. $3ATP + 3NADPH_2$.

Answer: B

Watch Video Solution

297. First reaction in photosynthesis is

A. Photolysis of water

B. Excitation of chlorophyll molecules

C. Formation of ATP

D. Fixation of CO_2.

Answer: B

Watch Video Solution

298. Which of the following occurs in dark reaction of photosynthesis ?

A. Fomation of ATP

B. Release of O_2

C. Release of H_2

D. Synthesis of $PGA / PGAL.$

Answer: D

Watch Video Solution

299. Process of assimilation of CO_2 to produce carbohydrates is

A. Oxidative

B. Catabolic

C. Reductive

D. All the above.

Answer: C

Watch Video Solution

300. Starch is stored in Potato tuber as

A. Sugar is synthesised in leaves

B. Sugar is transported from leaves to tubers

C. In the tuber sugar is changed to starch

D. All the above.

Answer: D

Watch Video Solution

301. Oxygen liberated during photosynthesis comes from

A. Realease of $.^{18}O$ if water contains the same

B. Isolated chloroplast supplied with reducing agent like potassium ferrocyanide evolves O_2 even in absence of CO_2

C. Photosynthetic bacteria do not liberate O_2 and they use H_2S for obtaining reducing power.

D. All the above.

Answer: D

Watch Video Solution

302. Chemical which absorbs light energy and changes it to chemical energy is

A. Xanthophyll

B. Chlorophyll a

C. Chlorophyll b

D. Chlorophyll c.

Answer: B

Watch Video Solution

303. Anatomy of C_4 plant leaf shows

A. Presence of peroxisomes

B. Presence of bundle sheath cells

C. Absence of mitochondria

D. Absence of bundle sheath cells.

Answer: B

Watch Video Solution

304. Hill used dye for his famous Hill reaction

A. Sulphur green

B. Eosine

C. Methylene blue

D. Dichlorophenol indophenol.

Answer: D

Watch Video Solution

305. Carotenes protect plants from

A. Photooxidation

B. Desiccation

C. Phtorespiration

D. Photosynthesis.

Answer: A

Watch Video Solution

306. Non-cyclic photophosphorylationdiffers from cyclic photophosphorylation in that the latter has

A. Only PS I

B. Evolution of oxygen

C. Reduction of $NADP^+$

D. Both B and C.

Answer: A

Watch Video Solution

307. The photosystem connected with splitting of water is

A. Photosystem I

B. Photosystem II

C. Phycobilisome

D. Carotenoids.

Answer: B

Watch Video Solution

308. [A]: Submerged plants get CO_2 in the form of carbonates and bicarbonates.

[R]: Stomata are not present in submerged plants.

A. if both are true but reason is correct explanation

B. both are true but reason is not correct explanation

C. assertion is true but reason is wrong

D. and both are wrong.

Answer: B

Watch Video Solution

309. ATP molecules required to synthesise one molecule of glucose by C_4 pathway are

A. 12

B. 18

C. 24

D. 30

Answer: D

Watch Video Solution

310. Most widely accepted theory of carbohydrate translocation is

A. Mass flow theory

B. Root pressure theory

C. Imbibition theory

D. Transpiration theory

Answer: A

Watch Video Solution

311. The hypothesis that all photosynthetic organic require a source of hydrogen was give by

A. Hill

B. Ruben and kamen

C. Van Niel

D. Emerson and Arnold.

Answer: C

Watch Video Solution

312. In C_3 plants, first carbon dioxide acceptor enzyme is

A. $PEPCO$

B. $RuBP$ carboxylase/Rubisco

C. $RuBP$ oxygenase

D. Oxidase.

Answer: B

Watch Video Solution

313. Scientist awarded Nobel Prize in 1960 for tracing the path of carbon in photosynthesis was

A. Hatch

B. Huber

C. Calvin

D. Ruben

Answer: C

Watch Video Solution

314. Blackman's law is related to

A. Photosynthesis

B. Respiration

C. Transpiration

D. Root Pressure.

Answer: A

Watch Video Solution

315. Assertion. A plant girdled upto phloem shows signs of degeneration of lower portion.

Reason. food transportation will stop causing the degeneration of the roots

A. If both are true but reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. and both are wrong.

Answer: C

Watch Video Solution

316. First stable product of C_4 / HSK photosynthesis is

A. Phosphoglyceric acid

B. Ribulose 1, 5-biphosphate

C. Malic acid

D. Phosphoglyceraldehyde.

Answer: C

Watch Video Solution

317. Match the columns

Column I		Column II	
a	Girdling experiment	p	Growth
b	Cobalt chloride paper test	q	Transpiration
c	Cresograph	r	Unequal transpiration on two leaf surfaces
d	Bell jar experiment	s	Translocation in phloem

A. a-s, b-r, c-p, d-q

B. a-s, b-p, c-q, d-r

C. a-r, b-p, c-s, d-q

D. a-q, b-p, c-s, d-r.

Answer: A

Watch Video Solution

318. Which one not take part in electron transfer

A. CoQ

B. FeS

C. ATP

D. NAD^+

Answer: C

Watch Video Solution

319. In presence of high concentration of oxygen, $RuBP$ carboxylase converts $RuBP$ to

A. Malic acid and PEP

B. PGA and PEP

C. PGA and malic acid

D. PGA and phosphoglycolate.

Answer: D

Watch Video Solution

320. Photolithotrophs (photoautotrophs) obtain energy from

A. Radiations and carbon from inorganic compounds

B. Radiations and carbon from organic compounds

C. Organic compounds

D. Inorganic compounds.

Answer: A

Watch Video Solution

321. Loading of phloem is related to

A. Elongation of phloem cells

B. Separation of phloem parenchyma

C. Strengthning of phloem fibres

D. Pouring of sugar into phloem.

Answer: D

Watch Video Solution

322. Which pair is wrong ?

A. $C_3 -$ Maize

B. Calvin cycle $\rightarrow PGA$

C. Hatch and Slack cycle $\rightarrow OAA$

D. C_4 — Kranz anatomy.

Answer: A

Watch Video Solution

323. Which one is product in respiration and reagent in photosynthesis?

A. O_2

B. CO_2

C. CO

D. N_2.

Answer: B

Watch Video Solution

324. which of the given statements are true regarding PSI and $PSII$? a. both are found on stroma lamellae b. both are involved in non cyclic flow of electrons c. only $PSII$ is associated with the release of O_2 d. $PSII$ lies on outer surface where as PSI lies on inner surface of thylakoids

A. Grana of chloroplast

B. Matrix of mitochondria

C. Stroma of chloroplast

D. Inner membrane of mitrochondrion.

Answer: A

Watch Video Solution

325. A photosynthesis cell is provided with $.^{14}CO_2$ and $H_2.^{18}O$. They form

A. $C_6H_{12}O_6 + O_2$

B. $.^{14}C_6H_{12}O_6 + O_2$

C. $.^{14}C_6H_{12}O_6 + .^{18}O_2$

D. $C_6H_{12}O_6 + O_2.$

Answer: C

Watch Video Solution

326. Ground substance of chloroplast is

A. Stoma

B. Stroma

C. Granum

D. Cisterna.

Answer: B

Watch Video Solution

327. C_4 and C_3 pathways of CAM plants are separated by

A. Bundle sheath

B. Mesophyll and bundle sheath cells

C. Mesophyll and bundle sheath chloroplasts

D. Time.

Answer: D

Watch Video Solution

328. Steps in non-cyclic photophosphorylation include passage of electrons along

A. $FRS \rightarrow FD \rightarrow Cytb_6 \rightarrow Cytf \rightarrow PC \rightarrow Chla$

B. $Chla \rightarrow Cytb_6 \rightarrow Cytf \rightarrow PC \rightarrow PSI \rightarrow FRS \rightarrow FD$

C.

$$Chla \rightarrow PQ \rightarrow Cytb_6 \rightarrow Cytf \rightarrow PC \rightarrow PSI \rightarrow FRS \rightarrow FD$$

D. $PQ \rightarrow Cytb_6 \rightarrow Cytf \rightarrow PC \rightarrow PSI \rightarrow FRS \rightarrow FD.$

Answer: D

Watch Video Solution

329. $PEPco$ is associated with

A. C_3 plants

B. CAM plants

C. C_4 plants

D. Both B and C.

Answer: D

Watch Video Solution

330. PEP, the first CO_2 acceptor in C_4 cycle is

A. 3-C compound

B. 4- C compound

C. 5- C compound

D. 6-C compound.

Answer: A

Watch Video Solution

331. Law of limiting factor is

A. Law of maximum

B. Law of minimum

C. Law of optimum

D. All the above.

Answer: B

Watch Video Solution

332. The sequential order in electron transport from PS II to PS I of photosynthesis is

A. FeS, PQ, PC and Cytochrome

B. FeQ, PQ, Cytochromes and PC

C. PQ, Cytochromes, PC and FeS

D. PC, Cytochromes, FeS, PQ

Answer: C

Watch Video Solution

333. Carbon assimilation takes place in

A. mitochondria

B. chloroplast

C. cytoplasm

D. golgy body

Answer: B

Watch Video Solution

334. Dimorphic chloroplasts occur in

A. Pea

B. Mango

C. Sugarcane

D. Cotton.

Answer: C

Watch Video Solution

335. Reaction centre of photosyngthesis is formed of

A. Chl b

B. Chl a

C. Carotene

D. Xanthophyll.

Answer: B

Watch Video Solution

336. Flow of electrons in non-cyclic photophosphorylation is

A. PS I only

B. PS II only

C. Stroma matrix

D. Both A and B.

Answer: D

Watch Video Solution

337. Who found that organic matter is synthesised with the help of solar energy

A. Hill

B. Van Steil

C. Mayer

D. Bayer.

Answer: C

Watch Video Solution

338. In photosynthetic electron transport system, Mn ions are associate with

A. $CF_0 - CF_1$ complex

B. Cyt $b_6 -$ Cyt f complex

C. Oxygen evolving complex

D. Plastoquinone.

Answer: C

Watch Video Solution

339. During photosynthesis

A. O_2 comes from CO_2

B. ATP is formed

C. Water is not required as reactant but only as a medium.

D.

Answer: B

Watch Video Solution

340. First transitory chemical formed by reaction between CO_2 and RuBP is

A. $PGAL/GAP$

B. PGA

C. 2-carboxy 3-keto, 1, 5-bisphosphoribotol

D. $DiHAP$.

Answer: C

Watch Video Solution

341. Red colour of tomato is due to which pigment

A. Lycopene

B. Phytochrome

C. Chromatochrome

D. Anthocyanin.

Answer: A

Watch Video Solution

342. Electrons lost by PS II are regained from

A. O_2

B. CO_2

C. H_2O

D. None of the above.

Answer: C

Watch Video Solution

343. Q. What percentage of usable radient energy entering a reaction site of photosynthesis is converted to potential energy

A. a) $10\ \%$

B. b) $35\ \%$

C. c) $20\ \%$

D. d) $42\ \%$

Answer: B

Watch Video Solution

344. Movement of soluble materials through the vascular tissues of plants is

A. Transpiration

B. Transcription

C. Transduction

D. Translocation.

Answer: D

Watch Video Solution

345. Assertion : In bacteria , photosynthesis occurs by utilizing wavelength longer than 700 nm.

Reason : Here the reaction centre is B-890 .

A. If both are true with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: B

Watch Video Solution

346. Assertion : When six molecules of carbon dioxide participate ini photosynthesis , 12 molecules of NADPH + H^+ and 18 ATP are used up , forming one hexose molecule.

Reason : The photosynthesis light reaction results in the formation of ATP and $NADPH_2$.

A. If both are true with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: B

Watch Video Solution

347. Chlorophyll a has

A. Reflects green light

B. Transmits green light

C. Absorbs green light

D. Transforms green light.

Answer: A

Watch Video Solution

348. In photosynthesis, energy for passage of electron is the one That is absorbed by

A. Chlorophyll

B. $RuBP$

C. Water

D. ATP.

Answer: A

Watch Video Solution

349. In photosynthesis energy from light reaction to dark reaction is transferred in th form of:-

A. ADP

B. ATP

C. Chlorophyll

D. $RuBP$.

Answer: B

Watch Video Solution

350. $ADP \rightarrow ATP$ reaction occurs when two protons $\left(H^{+}\right)$ are passed from

A. Thylakoid to sytosol

B. Thylakoid to lumen

C. Lumen of thylakoid to stroma

D. Stroma to thylakoid lumen.

Answer: C

Watch Video Solution

351. Which is true statement ?

A. PEP-pyruvate causes substrate level phosphorylation

B. PS II has oxygen producing complex

C. NADPH is assimilatory power

D. All the above.

Answer: D

Watch Video Solution

352. ETC of photosynthesis process is

A. Bound to thylakoid membrane

B. Present in stroma

C. Bound to outer chloroplast membrane

D. Dispersed in sytosol.

Answer: A

Watch Video Solution

353. Maximum starch is manufactured by

A. Spongy paranchyma

B. Palisade parencyma

C. Guard cells

D. Vascular tissue.

Answer: B

Watch Video Solution

354. The process in which excess energy is lost by light waves is called

A. Fluorescence

B. Photooxidation

C. Photolysis

D. Photophosphorylation.

Answer: A

Watch Video Solution

355. Maximum photosynthesis occurs in light

A. Red

B. Green

C. Very high light

D. Continuous light.

Answer: D

Watch Video Solution

356. Which one occurs both during cyclic and non-cyclic modes of photophosphorylation

A. $ADP + AMP \xrightarrow{\text{Light energy}} ATP$

B.

$$ADP + \quad \text{Inorganic phosphate} over st(\text{Light energy})(\ \rightarrow\ ) ATP$$

C. $ADP + \quad \text{Inorganic} PO_4 \rightarrow ATP$

D. $AMP + \quad \text{Inorganic} PO_4 \xrightarrow{\text{Light energy}} ATP.$

Answer: B

Watch Video Solution

357. Stomata of CAM plants

A. Are always open

B. Open during day and close at night

C. Open during nght and close during day

D. Never open.

Answer: C

Watch Video Solution

358. Sugarcane is

A. $RuBP$ carboxylase

B. PEP carboxylase

C. Ribulose phosphate kinase

D. Fructose phosphatase.

Answer: B

Watch Video Solution

359. Which one of the following is wrong in relation to photorespiration?

A. It occurs in chloroplasts

B. It occurs in day time only

C. It is characteristic of C_4 plants

D. It is characteristic of C_3 plants.

Answer: C

Watch Video Solution

360. Carotenoids are

A. Blue and green

B. Green and red

C. Red and violet

D. Violet and blue.

Answer: A

Watch Video Solution

361. Anatomy of C_4 plant leaf shows

A. Presence of chloroplasts in bundle sheath cells

B. Presence of chloroplasts in mesophyll and epidermal cells

C. Presence of typical granal chloroplasts in bundle sheath cells and rudimentary chloroplasts in mesophyll cells

D. Presence of rudimentary chloroplasts in bundle sheath cells and typical granal chloroplasts in mesophyll cells.

Answer: A

Watch Video Solution

362. A decrease in photosynthetic rate with increased availability of oxygen is called

A. Warburg effect

B. Richmond Lang effect

C. Blackman's Law of limiting factors

D. Emerson's enhancement effect.

Answer: A

Watch Video Solution

363. Hill reactions occurs in

A. High altitude plants

B. Total darkness

C. Absence of water

D. Presence of ferricyanide.

Answer: D

Watch Video Solution

364. Food manufactured in leaves is passed out to other parts of the plant through

A. Phototaxis

B. Translocation

C. Descent of sap

D. Chemotaxis.

Answer: B

Watch Video Solution

365. In a CAM plant the concentration of organic acid

A. Decreases during night

B. Increases during day

C. Increases during night

D. Both A and B.

Answer: C

Watch Video Solution

366. Photoautotrophs lacking chlorophyll a are

A. Cyanobacteria

B. Red algae

C. Brown algae

D. Bacteria.

Answer: D

Watch Video Solution

367. Amount of CO_2 fixed annually is about

A. 70×10^{10} kg

B. 70×10^{11} kg

C. 70×10^{13} kg

D. 70×10^{13} g.

Answer: C

Watch Video Solution

368. Q. Plants showing C_4 photosynthesis have

A. a) Granal bundle sheath chloroplasts and agranal mesophyll chloroplasts

B. b) Agranal bundle sheath chloroplasts and granal mesophyll chloroplasts

C. c) Both bundle sheath and mesophyll chloroplasts are agranal

D. d) Both the type of chloroplasts are granal.

Answer: D

Watch Video Solution

369. Electron acceptor of PS II is

A. Cyt b

B. FRS

C. PQ

D. $NADP^+$

Answer: C

Watch Video Solution

370. Number of carboxylations in C_4 plant is

A. One

B. Two

C. Three

D. Four.

Answer: B

Watch Video Solution

371. Potted plants are not allowed to remain in room of a patient during night as

A. they concume O_2 at night

B. Produce CO_2 at night

C. They release O_2 only during day

D. they are unable to photosynthesize and deplete O_2 of the room at night.

Answer: D

Watch Video Solution

372. Excitation of chlorophyll by light is

A. Exergonic reaction

B. Anabolic reaction

C. Photochemical reaction

D. Photooxidation reaction.

Answer: C

Watch Video Solution

373. Fill in blanks (w.r.t. experimental material used by Morgan)

(i) Females are easily distinguishable from the male by the _____ body size.

(ii) It has many type of hereditaly variations that can be seen with _____ power microscope.

(iii) Male individuals have hetromorphic_____ .

A. More chlorophylla and more accessory pigments

B. More chlorophylls and less accessory pigments

C. Less chlorophylls and more accessory pigments

D. Less chlorophylls and less accessory photosynthetic pigments.

Answer: A

Watch Video Solution

374. Plants living in hot humid environment are

A. C_3 plants

B. CAM plants

C. C_4 plants

D. All the above.

Answer: D

Watch Video Solution

375. pH of phloem sap is

A. $8.7 - 9.6$

B. $7.5 - 8.6$

C. $5.0 - 6.0$

D. $2.4 - 0.8$

Answer: B

Watch Video Solution

376. The characteristics of C_4 plants is (a) Kranz anatomy (b) First product oxaloacetic acid (c) Carboxylating enzymes are $PEPco$ and Rubisco

A. a and b but not c

B. b and c and not a

C. a and c but not b

D. All a, b and c.

Answer: D

Watch Video Solution

377. Emerson effect is related to

A. Photosynthesis

B. Respiration

C. Transpiration

D. Absorption of water.

Answer: A

Watch Video Solution

378. Photosynthesis is maximum in

A. Blue light

B. Red light

C. Green light

D. Both A and B.

Answer: D

Watch Video Solution

379. $RuBisCO$ is enzyme for

A. Regeneration of RuBP

B. Photolysis of water

C. CO_2 fixation

D. All the above.

Answer: C

Watch Video Solution

380. Non-cyclic photophosphorylation produces

(i) NADPH

(ii) ATP and O_2

(iii) ATP only

(iv) O_2 only

Codes:

A. NAD^+

B. $NADH$

C. $NADPH$

D. $NADP^+$

Answer: C

Watch Video Solution

381. In electron transport system a carrier holds electron at

A. $NADPH$

B. $NADP^+$

C. Atomic oxygen

D. Chlorophyll a.

Answer: B

Watch Video Solution

382. As compared to sun plats, plants adapted to low light intensity possess

A. High rate of CO_2 fixation

B. Larger photosynthetic unit

C. More extended root system

D. Spiny leaves.

Answer: B

Watch Video Solution

383. Which is not an electron carrier

A. CoQ

B. Cyt c

C. Cyt a

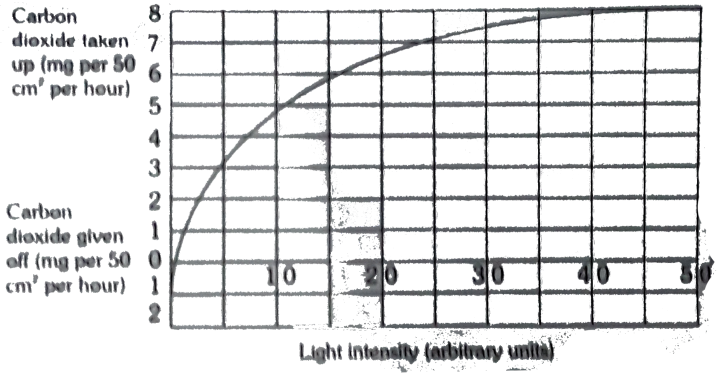
D. H_2O

Answer: D

Watch Video Solution

384. The graph shows the relation between light intensity and the giving off and taking up of carbon dioxide by the leaves of a plant.

Why is most carbon dioxide given off when the light intensity is zero units.



A. Only respiration is occurring

B. It is only start of experiment

C. Only photosynthesis is occurring at this light intensity

D. Rate of photosynthesis equals repiration at this intensity.

Answer: A

Watch Video Solution

385. Match the columns and find the correct combination

a	Grana of chloroplast	*i*	Krebs cycle
b	Stroma of chloroplast	*ii*	Light reaction
c	Cytoplasm	*iii*	Dark reaction
d	Mitochondrial matrix	*iv*	Glycolysis

A. a-iv, b-iii, c-ii, d-i

B. a-I, b-ii, c-iv, d-iii

C. a-ii, b-iii, c-iv, d-i

D. a-iii, b-iv, c-I, d-ii.

Answer: C

Watch Video Solution

386. Assertion:Cyclic pathway of photosynthesis first appeared in some eubacterial species.

Reason:Oxygen started accumulating in the atmosphere after the non-cylic pathway of photosynthesis evolved.

A. If both are true with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: B

Watch Video Solution

387. How many molecules of glycine are required to release one molecule of CO_2 in photorespiration

A. One

B. Two

C. Three

D. Four.

Answer: B

Watch Video Solution

388. The first step in dark reaction of photosynthesis is

A. Formation of ATP

B. Attachment of carbon dioxide to a pentose sugar

C. Excitement of an electron of chlorophyll by photon of light

D. Ionisation of water.

Answer: B

Watch Video Solution

389. Photosynthesis is essential for survival of

A. Animals

B. Plants

C. Most of the organism

D. All the above.

Answer: D

Watch Video Solution

390. Photosystem II is concerned with

A. Photolysis of water

B. Flowering

C. Reduction of CO_2

D. Release of energy.

Answer: A

Watch Video Solution

391. Which one is false about kranz anatomy

A. It is found in Atriplex

B. Bundle sheath cells have large chloroplasts and less developed grana

C. Mesophyll cells have large chloroplasts and more developed grana

D. The plants with Kranz anatomy have better photosynthetic power than C_3 plants.

Answer: C

Watch Video Solution

392. Source of CO_2 for photosynthesis during day in CAM plants is

A. 3-PGA

B. Malic acid

C. Oxaloacetic acid

D. Pyruvate.

Answer: B

Watch Video Solution

393. Water releases protons. Twelve water molecules will release

A. $24H^+$

B. $48H^+$

C. $12H^+$

D. $6H^+$

Answer: A

Watch Video Solution

394. Phytol chain is present in

A. Carotenoids

B. Phycocyanin

C. Chlorophyll

D. Haemoglobin.

Answer: C

Watch Video Solution

395. Which one is important in electron transport system ?

A. Ubiquinone

B. Acetyl CoA

C. Tricarboxylic acid

D. Ferricyanide.

Answer: A

Watch Video Solution

396. Which of the following is the most common H^+ acceptor ?

A. FAD and NAD^+

B. FMN and NAD^+

C. FMN and FAD

D. NAD^+ and $NADP^+$

Answer: D

Watch Video Solution

397. Carbon in carbon dioxide is radioactively labelled. The product in which radioactive carbon can be traced in C_3 plants is

A. PEP

B. $RuBP$

C. $PGAL$

D. PGA.

Answer: D

Watch Video Solution

398. Blue and red light are equally effective in photosynthesis but blue light is less efficient because

A. It is fluorescent

B. It has lesser wavelength

C. A lot of energy is wasted in infrared radiations

D. It cannot bring photolysis of water and release of O_2 along.

Answer: C

Watch Video Solution

399. Which one has Kranz anatomy ?

A. Maize/sugarcane

B. Wheat

C. Rice

D. Potato.

Answer: A

Watch Video Solution

400. In which of the following substrate level phosphorylation does not occur ?

A. 1, 3-biphosphoglyceric acid $\rightarrow$ 3 phosphoglyceric acid

B. Glucose 6-phosphate $\rightarrow$ Fructose 6-phosphate

C. Succinyl CoA $\rightarrow$ Succinic acid

D. Phosphoenol pyruvic acid $\rightarrow$ pyruvic acid.

Answer: B

Watch Video Solution

401. The following enzymes participate in the initial CO_2 fixation through Calvin cycle:-

1. RUBISCO-

2. Triose phosphate dehydrogenase-

3. Phosphoglyceric kinase-

The correct sequence in which these enzymes participate in CO_2 fixation is:

A. $4, 1, 3, 2$

B. $3, 2, 4, 1$

C. $4, 3, 1, 2$

D. $2, 1, 4, 3.$

Answer: C

Watch Video Solution

402. .....are CAM plant

A. Maize

B. Pineapple

C. Onion

D. Pea.

Answer: B

Watch Video Solution

403. Number of chlorophyll arranged per reaction centre in the light harvesting complex are

A. 100

B. 200

C. 300

D. 400

Answer: C

Watch Video Solution

404. Match the columns and find the correct combination

I		II	
a	Carboxylation	*i*	Oxygen evolution
b	Phosphorylation	*ii*	Photorespiration
c	Photolysis of water	*iii*	Rubisco
d	Phosphoglycolate	*iv*	Chemosynthesis
e	*Nitrosomonas*	*v*	ATP

A. a-I, b-ii, c-iii, d-iv, e-v

B. a-iii, b-v, c-I, d-ii, e-iv

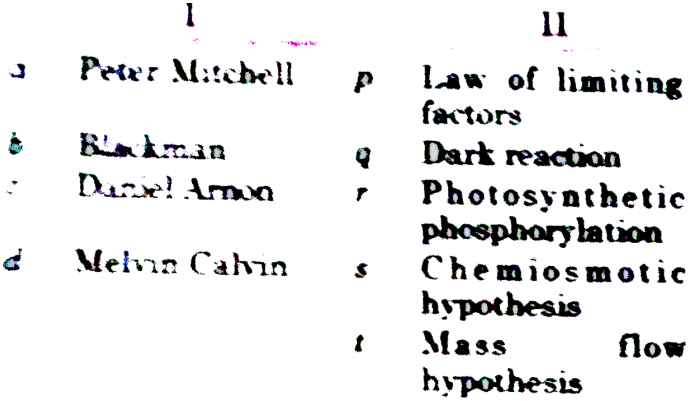
C. a-ii, b-iii, c-v, d-iv, e-i

D. a-I, b-iii, c-iv, d-ii, e-v

Answer: B

Watch Video Solution

405. Match the columns and identify the correct combination



I		II	
a	Peter Mitchell	p	Law of limiting factors
b	Blackman	q	Dark reaction
c	Daniel Arnon	r	Photosynthetic phosphorylation
d	Melvin Calvin	s	Chemiosmotic hypothesis
		t	Mass flow hypothesis

A. a-s, b-p, c-r, d-q

B. a-p, b-s, c-q, d-r

C. a-q, d-p, c-r, d-s

D. a-s, b-r, c-q, d-p.

Answer: A

Watch Video Solution

406. Choose the correct statement

A. C_4 plants do not have Rubisco

B. carboxylation of RuBP leads to the formation of PGA and phosphoglycolate

C. Carboxylation of phosphoenol pyruvaye results in the formation of C_4 acids

D. Carboxylation of C_4 acids occur in mesophyll cells

Answer: C

Watch Video Solution

407. Respiration initated in chloroplasts and occurs in light is called

A. Aerobic respiration

B. Anaerobic respiration

C. Fermentation

D. Photorespiration.

Answer: D

Watch Video Solution

408. Which one is a C_4 plant ?

A. Potato

B. Mustard

C. Onion

D. Wheat.

Answer: C

Watch Video Solution

409. As compared to a C_3-plant, how many additional molecules of ATP are needed for net production of one molecule of hexose net production of one molecuile of hexone sugar by C_4-plants

A. Two

B. Six

C. Twelve

D. Zero.

Answer: C

Watch Video Solution

410. Photosynthesis in C_4 plants is relatively less limited by atmospheric CO_2 levels because

A. Effective pumping of CO_2 into bundle sheath cells

B. $RuBisCO$ in C_4 plants has higher affinity for CO_2

C. Four carbon acids and primary initial CO_2 fixation products

D. Primary fixation of CO_2 is mediated via PEP carboxylase.

Answer: D

Watch Video Solution

411. Carbohydrates, the most abundant biomolecules on earth, are produced by -

A. Some bacteria, algae and green plants

B. Fungi, algae and green plants

C. All bacteria, fungi and algae

D. Viruses, fungi and bacteria.

Answer: A

Watch Video Solution

412. Solarisation is

A. Formation of chlorophyll

B. Destruction of chlorophyll

C. Utilisation of sunlight

D. Effect of solar light.

Answer: B

Watch Video Solution

413. Phenomenon which converts light energy into chemical energy is

A. Respiration

B. Photosynthesis

C. Transpiration

D. None of the above.

Answer: B

Watch Video Solution

414. [A]: C_4 pathway is more efficient that n C_3 pathway.

[R]: Photorespiration is suppressed in C_4 plants

A. If both are true with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: A

Watch Video Solution

415. Assertion. The atmospheric concentration of CO_2 at which photosynthesis just compensates for respiration is referred to as CO_2 compensation point.

Reason. CO_2-compensation point is reached when the amount of CO_2 uptake is less than that generated through respiration because the level of CO_2 is more than that required for achieving CO_2-compensation point.

A. If both are true with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: C

Watch Video Solution

416. C_4 plant shows efficiency even in

A. Low concentration of CO_2

B. Low temperature

C. High CO_2 concentration

D. At low water availability.

Answer: A

Watch Video Solution

417. Photorespiration involves oxidation of

A. Chlorophyll a

B. PGA

C. RuBP

D. Both B and C.

Answer: C

Watch Video Solution

418. ATP synthetase of chloroplasts is similar to that of

A. Mitochondria

B. Peroxisomes

C. Golgi bodies

D. Microsomes.

Answer: A

Watch Video Solution

419. Carbon assimilation occurs in bundle sheath cells of

A. CAM plants

B. C_4 plants

C. C_3 plants

D. All the above.

Answer: B

Watch Video Solution

420. How much O_2 is formed from 264 g CO_2 & 216 g of H_2O

A. 96 g

B. 216 g

C. 264 g

D. 192 g.

Answer: D

Watch Video Solution

421. Photosynthesis is

A. Endothermic process

B. Catabolic process

C. Exothermic process

D. Thermodynamic process.

Answer: A

Watch Video Solution

422. Equal amount of sunlight is received on all sides by

A. Unipinnate leaf

B. Palmately compound leaf

C. Isobilateral leaf

D. Dorsiventral leaf.

Answer: C

Watch Video Solution

423. Energy contained in plant carbohydrates comes from

A. Minerals

B. CO_2

C. Proteins

D. Sunlight

Answer: D

Watch Video Solution

424. In photosystem-I, the first electron acceptor is

A. An Fe-S protein

B. Ferredoxin

C. Cytochrome

D. Plastocyanin.

Answer: A

Watch Video Solution

425. During photorespiration, the oxygen consuming reaction(s) occur in

A. Stroma of chloroplasts

B. Stroma of chloroplasts and mitochondria

C. Stroma of chloroplasts and peroxisomes

D. Grana of chloroplasts and peroxisomes.

Answer: C

Watch Video Solution

426. Which is most abundant in chloroplast ?

A. Aldolase

B. RuBP carboxylase

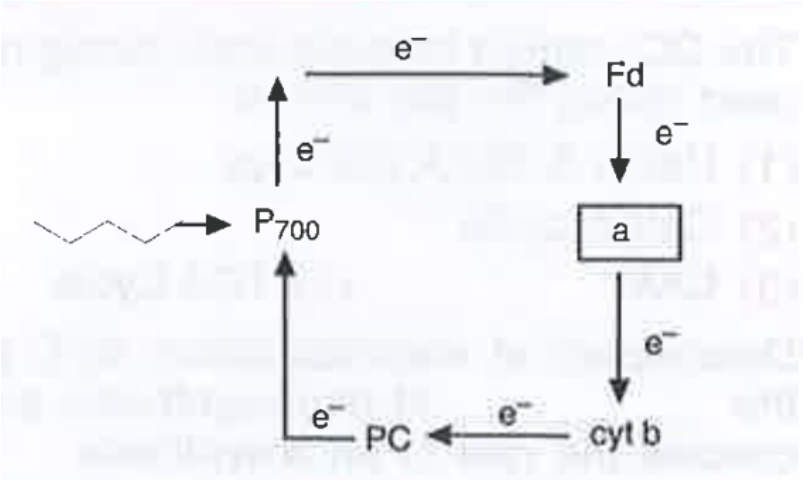
C. Phosphatase

D. Transketolase.

Answer: B

Watch Video Solution

427. In the chart of photophosphorylation, what does 'a' represent



A. Cyt a

B. Cyt a_3

C. FRS

D. PQ.

Answer: D

Watch Video Solution

428. NAD^+ is reduced in photorespiration inside

A. Mitochondria

B. Mitochondria and peroxisome

C. Mitochondria and chloroplasts

D. Chloroplasts and peroxisomes.

Answer: A

Watch Video Solution

429. Chloroplasts are agranal in

A. Bundle sheath cells of C_3 plants

B. Bundle sheath cells of C_4 plants

C. Mesophyll cells of all plants

D. Mesophyll cells of C_4 plants.

Answer: B

Watch Video Solution

430. Assertion : Under conditions of high light intensity and limited CO_2 supply, photorespiration has a useful role in protecting the plants from photo oxidative damage.

Reason If enough CO_2 is not avilable to utilize light enregy for carboxylation to proceed, the excess energy may not cause damage to plants.

A. If both are true with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: A

Watch Video Solution

431. [A]: Photosynthetically C_4 plants are less effi- cient than C_3 plants.

[F]: The operation of C_4 pathway sequires the involvement of only bundle sheeth cells.

A. If both are true with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: D

Watch Video Solution

432. Which of the following statements is true with regard to light reaction of photosynthetic mechanism in plants

A. Chlorophyll a occurs with peak absorption at 680 nm in PS I and 700 nm in PS II

B. Mg and Na are associated with photolysis of H_2O

C. O_2 is evolved during cyclic photophosphorylation

D. PS I and PS II are both involved in noncyclic photophosphorylation

Answer: D

Watch Video Solution

433. Find out correct simplified equation of photosynthesis

A. $CO_2 + 2H_2O \xrightarrow[\text{chlorophyll}]{\text{light energy}} C_5H_{10}O_4 + H_2O + O_2 \uparrow$

B. $CO_2 + 2H_2O \xrightarrow[\text{chlorophyll}]{\text{light energy}} (CH_2O)_n + H_2O + O_2 \uparrow$

C. $CO_2 + 2H_2O \xrightarrow[\text{chlorophyll}]{\text{light energy}} (CH_2O)_n + O_2 \uparrow$

D. $CO_2 + 2H_2O \xrightarrow[\text{chlorophyll}]{\text{light energy}} C_3H_6O_3 + CO_2 + O_2 \uparrow$

Answer: B

Watch Video Solution

434. The Calvin cycle proceed in three stages:

1. Reduction, during which carbohydrate is formed at the expense of the Photochemically made ATP and NADPH.

2. Regeneration, during which the carbon dioxide acceptor ribulose-1,5-biphate is formed.

3. Carboxylation, during which the carbon dioxide combines with ribulose-1,5-biphosphate.

Identify the correct sequence.

A. $3, 1, 2$

B. $3, 2, 1$

C. $1, 2, 3$

D. $2, 1, 3$

Answer: A

Watch Video Solution

435. Which one does not evolve oxygen

A. Green algae

B. Blue-green algae

C. Autotrophic plants

D. Photosynthetic bacteria.

Answer: D

Watch Video Solution

436. The first reaction in photorespiration is

A. Carboxylation

B. Decarboxylation

C. Oxygenation

D. Phosphorylation.

Answer: C

Watch Video Solution

437. Girdling experiment is not successful in monocots due of

A. Vansular bundles are not arranged in a ring

B. Vascular bundles are arranged in a ring

C. Vascular bundles are radial

D. None of above.

Answer: A

Watch Video Solution

438. Which one provides electrons for reduction reactions in photosynthesis

A. $NADPH$

B. chlorophyll

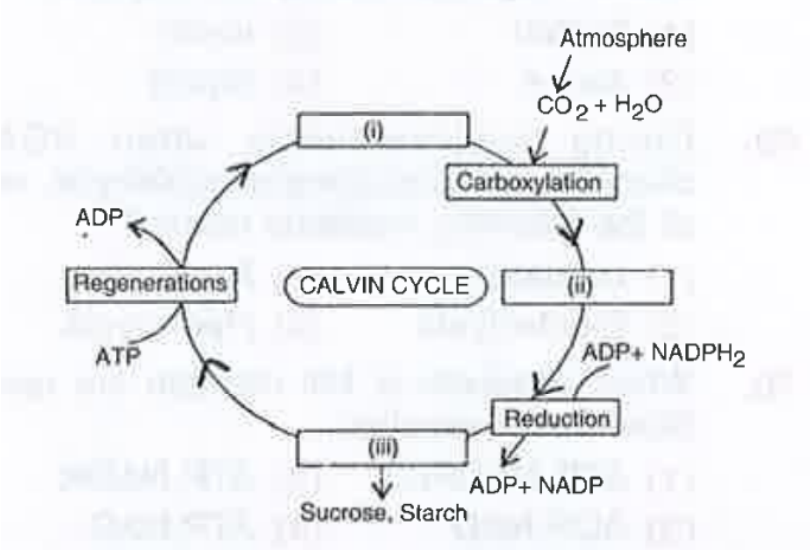
C. Cytochrome

D. Water.

Answer: D

Watch Video Solution

439. Choose the correct combinations of labelling the carbohydrate molecule involved in the Calvin cycle.



A. a-RuBP, b-Triose phosphate, c-PGA

B. a-PGA, b-RuBP, c-Triose phosphate

C. a-PGA, b-Triose phosphate, c-RuBP

D. a-RuBP, b-PGA, c-Triose phosphate

Answer: D

Watch Video Solution

440. Match the columns and choose the correct option

	Column I		Column II
a	Visible light	i	0·1 – 1·0 nm
b	Ultraviolet	ii	400 – 700 nm
c	X-rays	iii	Longer than 700 nm
d	Infrared	iv	100 – 400 nm
		v	0·1 m

A. a-I, b-iii, c-iv, d-v

B. a-iii, b-ii, c-I, d-v

C. a-iv, b-iii, c-ii, d-i

D. a-ii, b-iv, c-I, d-ii.

Answer: D

Watch Video Solution

441. Photolysis of water results in the release of

A. 2 electrons and 4 protons

B. 4 electrons and 4 protons

C. 4 electrons and 2 protons

D. 2 electrons and 2 protons

Answer: D

Watch Video Solution

442. Four electrons produced during photolysis of water will enter

A. PS I

B. PQ

C. PS II

D. PC.

Answer: C

Watch Video Solution

443. Photorespiration involves

A. Synthesis of PGA

B. Reduction of glyoxylate

C. Oxidation of glycolate

D. Oxygenation of glycolate.

Answer: C

Watch Video Solution

444. C_3 plants and C_4 plants

A. Compensation point of C_3 plants is higher

B. Compensation point of C_4 plants is higher

C. It is equal

D. None of these as it is variable.

Answer: A

Watch Video Solution

445. CAM plants belong to family

A. Malvaceae

B. Crassulaceae

C. Trapaceae

D. Orchidaceae.

Answer: B

Watch Video Solution

446. The translocation of solute is

A. Imbibition force

B. Turgor pressure (TP) gradient

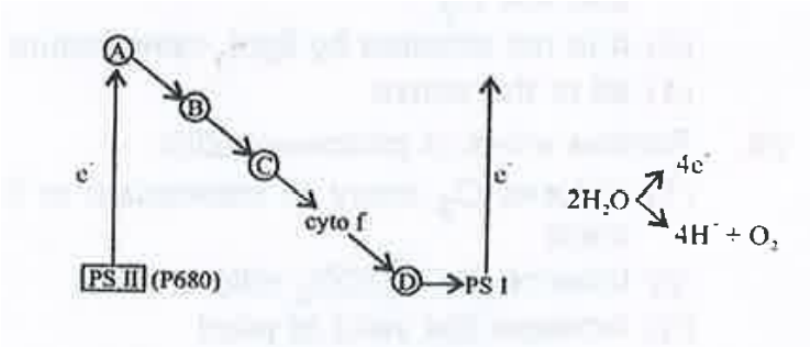
C. Both A and B

D. None of these.

Answer: B

Watch Video Solution

447. In the schematic diagram given, which is plastocyanin ?



A. a

B. b

C. c

D. d

Answer: D

Watch Video Solution

448. In non-cyclic photophosphorylation, PS I is reduced by

A. Electron from PS II

B. Electron from ferredoxin

C. Hydrogen from water

D. Hydrogen from PS II.

Answer: A

Watch Video Solution

449. Succulents perform CO_2 fixation

A. CAM pathway

B. C_4 pathway

C. C_3 pathway

D. C_2 pathway.

Answer: A

Watch Video Solution

450. Coupling Reaction

A. Ribosome

B. stroma

C. Matrix

D. Thylakoids.

Answer: D

Watch Video Solution

451. During photosynthesis

A. Cyclic photophosphorylation

B. Non-cyclic photophosphorylation

C. Oxidative photophosphorylation

D. Calvin cycle.

Answer: B

Watch Video Solution

452. The herbicide DCMU kills the weeds because it inhibits

A. PS II

B. PS I

C. Destroys chloroplast

D. Inhibits oxidative phosphorylation.

Answer: A

Watch Video Solution

453. Ammonia is produced during

A. Photorespiration

B. CAM

C. Dark respiration

D. All the above.

Answer: A

Watch Video Solution

454. 3-PGA is first stable product in

A. Carbon oxidation cycle

B. Carbon reduction cycle

C. Reductive amination

D. Malic acid synthesis.

Answer: B

Watch Video Solution

455. In the leaves of C_4 plants, malic acid formation during CO_2 fixation occurs in the cells of

A. Epidermis

B. Bundle sheath

C. Phloem

D. Mesophyll.

Answer: D

Watch Video Solution

456. Which is not an accessory pigment

A. Carotene

B. Xanthophyll

C. Chlorophyll a

D. Chlorophyll b.

Answer: C

Watch Video Solution

457. Which chlorophyll does not possess phytol

A. Chl a

B. Chl b

C. Chl c

D. Chl d.

Answer: C

Watch Video Solution

458. Photorespiration is not detectable in

A. C_3 plants

B. C_4 plants

C. Both A and B

D. None of the above.

Answer: B

Watch Video Solution

459. $RuBP$ occurs in

A. Krebs cycle

B. C_4 plants

C. ETS

D. Calvin cycle.

Answer: D

Watch Video Solution

460. Bulk CO_2-fixation occurs in

A. Phytoplankton

B. Bacteria

C. Green plants

D. Zooplankton.

Answer: A

Watch Video Solution

461. Molecules of $RuBP$ required to produce 20 molecules of serine in photorepiration are

A. 60

B. 40

C. 20

D. 80

Answer: B

Watch Video Solution

462. Which is correct in photorespiration ?

A. In mitochondria serine is converted into hydroxypyruvate

B. In mitchondria two glycine molecules unite to form serine

C. In mitochondria, glycolate is oxidised to form glyoxylate

D. In peroxisomes, three molecules of glycine unite to form serine.

Answer: B

Watch Video Solution

463. Identify the correct combinations

	Substrate	Enzyme	Product
I	Phosphoenol pyruvate	PEP carboxylase	C_4 acid
II	Malate	Malic enzyme	C_4 acid
III	RuBP	Ribulose phosphate kinase	C_3 acid
IV	Pyruvate	Pyruvate dikinase	C_3 acid

A. III and IV

B. I and IV

C. II and III

D. I and II.

Answer: B

Watch Video Solution

464. What is correct about the following satement

(a) Portion of spectrum between 500-800 nm is PAR

(b) Mg, Ca, Cl have prominent role in photolysis of water

In cyclic photophosphorylation, O_2 and $NADPH$ are not produced

A. a true, b, c false

B. b true, a, c false

C. a, b true, c false

D. a, b false, c true

Answer: D

Watch Video Solution

465. What are true

(a) In C_4 plants, primary CO_2 acceptor is PEP

(b) PS II absorbs energy at or just below 680 mm

(c) PS I has P_{683}

A. a, c

B. a

C. a, b

D. c

Answer: C

Watch Video Solution

466. Which ones are correct

(a) Photosynthetic ATP synthesis is called photophosphorylation

(b)Kranz anatomy occurs in leaf

(c) Reduction in $NADP$ to $NADPH$ occurs during Calvin cycle

(d) Magnesium occurs in phytol tail of chlorophyll

A. a, b correct

B. c, d correct

C. a, c correct

D. a, d correct

Answer: A

Watch Video Solution

467. Match the columns

	I		II
a	Warburg effect	*p*	Change in gene frequency by chance
b	Pasteur effect	*q*	Postponing severence of leaves by cytokinin
c	Emerson effect	*r*	Decline in consumption of respiratory substrate during transition from anaerobic to aerobic conditions
d	Wright effect	*s*	Inhibitory effect of O_2 on photosynthesis
		t	Enhancement of photosynthesis by two different wavelengths of light

A. a-t, b-r, c-p, d-s

B. a-s, b-t, c-q, d-r

C. a-s, b-r, c-t, d-p

D. a-t, b-s, c-p, d-q.

Answer: C

Watch Video Solution

468. CAM helps the plants in

A. Dattime when stomata are open

B. Night when stomata are open

C. Night when hydathodes are open

D. Daytime through lenticels.

Answer: B

Watch Video Solution

469. Cyclic photophosphorylation involves

A. PS I does not function beyond 680 nm

B. No evolution of oxygen

C. Unidirectional cyclic movement of electrons

D. Only ATP is formed, $NADPH$ is not formed.

Answer: D

Watch Video Solution

470. Which type of plants show Kranz anatomy?

A. Well developed chloroplasts in bundle sheath cells

B. Rudimentary chloroplasts in bundle sheath cells

C. Chloroplasts in epidermal cells

D. Chloroplasts in vascular tissue.

Answer: A

Watch Video Solution

471. C_4 plants and CAM plants

A. Keeping stomata closed during day time

B. Using PEP carboxylase

C. Fixing CO_2 into organic acid in night and releasing CO_2 during day

D. Performing Calvin cycle at night

Answer: C

Watch Video Solution

472. Photosynthetic autotrophs get their energy requirement from

A. Inorganic chemicals

B. Organic chemicals

C. Heat

D. Light.

Answer: D

Watch Video Solution

473. Which metal ion is a constituent of chloro- phyll

A. Mn

B. Cu

C. Mg

D. Fe.

Answer: C

Watch Video Solution

474. HSK pathway is also known as

A. C_3 cycle

B. C_4 cycle

C. C_2 cycle

D. None of the above.

Answer: B

Watch Video Solution

475. About $71\ \%$ of total global carbon is found is

A. Oceans

B. Forests

C. Agro ecosystem

D. Grasslands.

Answer: A

Watch Video Solution

476. The C_4 plants are photosynthetically more efficient than C_3 plants because

A. CO_2 efflux is not prevented

B. They have more chloroplasts

C. CO_2 compensation point is more

D. CO_2 generated during photorespiration is recycled through PEP carboxylase.

Answer: B

Watch Video Solution

477. The first acceptor of electrons from an excited chlorophyll molecule of photosystem II is

A. Quinone

B. Ferredoxin

C. Cytochrome b

D. Cytochrome f.

Answer: A

Watch Video Solution

478. Electron acceptor of PS II is

A. Phaeophytin

B. Plastoquinone

C. Cyt b

D. Plastocyanin.

Answer: D

Watch Video Solution

479. Photolysis of water results in the release of

A. Light

B. Chlorophyll

C. Both A and B

D. Electron transport.

Answer: C

Watch Video Solution

480. PGA is reduced through

A. $NADPH_2$

B. $FADH_2$

C. CoA

D. CoQ.

Answer: A

Watch Video Solution

481. PS I is inactive at

A. 550 nm

B. 680 nm

C. 690 nm

D. 780 nm.

Answer: D

Watch Video Solution

482. Enzyme responsible for formation of glucose from glucose 6-phosphate is

A. Dehydrogenase

B. Aldolase

C. Kinase

D. Phosphatase.

Answer: C

Watch Video Solution

483. Assertion: In C_4 plants, the bundle sheath cells are rich in an enzyme phosphoate carboxylase-oxygenase (PEP case). Reason: In C_4,the mesophyll cells are rich in an enzyme ribulose carboxylase-oxygenase(RuBisCo)

A. Have thin walls to facilitate gaseous exchange

B. Have large intercellular spaces

C. Have a high density of chloroplasts

D. Are rich in PEP carboxylase.

Answer: C

Watch Video Solution

484. Identify the incorrect statement with respect to Calvin cycle

A. $NADPH + H^+$ produced in light reaction is used to reduce diphosphoglycerate

B. First stable intermediate compound is phosphoglycerate

C. Carboxylation of $RuBP$ is catalysed by Rubisco

D. 18 molecules of ATP are synthesised during carbon fixation.

Answer: D

Watch Video Solution

485. Which statement about photosynthesis is incorrect ?

A. Enzymes required for carbon fixation are locted in grana of chloroplasts

B. In green plants, both PS I and PS II are required for synthesis of $NADPH + H^+$

C. Electron carriers of photophosphorylation are located on thylakoid membranes.

D. Photosynthesis is redox process in which water is oxidised and CO_2 is reduced.

Answer: A

Watch Video Solution

486. The function of companion cells is to

A. Diffusion

B. Active process

C. Passive transport

D. Turgor.

Answer: B

Watch Video Solution

487. Non-cyclic electron flow in chloroplast/light reaction results in production of

A. ATP

B. ATP and $NADPH$

C. $ATP, NADPH, O_2$

D. $NADPH.$

Answer: C

Watch Video Solution

488. Phloem sap is mainly composed of

A. Sucrose

B. Galactose

C. Fructose

D. Starch.

Answer: A

Watch Video Solution

489. In chorophyll, structure four pyrrole ring are united with Mg by their atoms of

A. C

B. H

C. O

D. N.

Answer: D

Watch Video Solution

490. An alternate CO_2 fixation mechanism was of found in some tropical species of grass family by Hatch and Slack, who were from

A. England

B. Australia

C. America

D. New zealand.

Answer: B

Watch Video Solution

491. Fixation and reduction of CO_2 require

A. ATP

B. $NADPH$, chlorophyll, water

C. ATP, $NADPH$

D. ATP, $NADPH$ and light.

Answer: C

Watch Video Solution

492. The enzymes ribulose biphosphate carboxylase-oxygenase and phosphoenol pyruvate carboxylase are activated by

A. Zn

B. Mo

C. Mn

D. Mg.

Answer: D

Watch Video Solution

493. Which is false ?

A. Flow of electrons from water to $NADP^+$ is non-cyclic and produces ATP

B. Light energy for photolysis of water comes from reaction centre of PS II

C. Two photosystems are needed for reduction of $NADP^+$

D. P_{680} and P_{700} are reaction centres of PS I and PS II respectively

Answer: D

Watch Video Solution

494. Mineral involved in photolysis of water are

(a) Mn (b) Ca

(c) Mg (d) Cl.

A. a, b

B. a, b, d

C. c, d

D. a, b, c

Answer: B

Watch Video Solution

495. Enzyme responsible for primary carboxylation in C_4 plants is

A. PEP carboxylase

B. Succinic dehydrogenase

C. RuBP carboxylase oxygenase

D. Hexokinase

Answer: A

Watch Video Solution

496. The ratio between 2-carbon and 3-carbon intermediates having-NH_2 group formed in photosynthetic oxidation cycle is

A. $2:1$

B. $1:1$

C. $3:2$

D. $3:4$

Answer: A

Watch Video Solution

497. Stroma in the chloroplasts of higher plants contains

A. Chlorophyll

B. Light dependent reaction enzymes

C. Light independent reaction enzymes

D. Lysosomes.

Answer: C

Watch Video Solution

498. Reaction centre of PS I is ___ and reaction centre of PS II is__

A. P_{700}

B. P_{680}

C. Chl_{715}

D. Chl_{685}.

Answer: A

Watch Video Solution

499. Isotope of oxygen used in studying photolysis is

A. . ^{16}O

B. . ^{15}O

C. . ^{17}O

D. . ^{18}O

Answer: D

Watch Video Solution

500. PS II accepts electrons from

A. OH^-

B. O^{2-}

C. H^+

D. Both A and C.

Answer: A

Watch Video Solution

501. PGA as the first CO_2-fixation product was discovered in photosynthesis of:-

A. Gymnosperms

B. Angiosperms

C. Alga

D. Bryophyte.

Answer: C

Watch Video Solution

502. Which is wrongly matched

A. Sorghum - Kranz anatomy

B. PS II -700

C. Photorespiration $-C_3$

D. PEP carboxylase - Mesophyll cells

Answer: B

Watch Video Solution

503. Which one of the following is not involved in photolysis of water?

A. Mg and Cl

B. K and Mn

C. Mo and Mn

D. Mn and Cl

Answer: D

Watch Video Solution

504. Which of the following statement regarding C_4 plants is false

A. The primary CO_2 acceptor is a 5-carbon molecule

B. The initial carboxylation reaction occurs in mesophyll

C. Calvin pathway does not take place in the mesophyll cells but does so only in bundle sheath cells

D. Leaves that fix CO_2 have two cell types

Answer: A

Watch Video Solution

505. Peroxisomes are found in

A. Glycolytic cycle

B. Calvin cycle

C. Bacterialphotosynthesis

D. Glyoxylate cycle.

Answer: A

Watch Video Solution

506. For yielding one molecule of glucose the Calvin cycle turns

A. $6CO_2 + 12ATP$

B. $6CO_2 + 18ATP + 12NADP$

C. $6CO_2 + 18ATP + 30NADPH$

D. $6CO_2 + 30ATP + 12NADPH$

Answer: B

Watch Video Solution

507. The creation of proton gradient across the thylakoid membrane is a result of

A. Decrease in proton number in stroma

B. Decrease in pH in the lumen

C. Accumulation of protons in the lumen

D. All the above.

Answer: D

Watch Video Solution

508. A C_4 plant loses as much water as a C_3 plant for the same amount of CO_2 fixed.

A. Double

B. One third

C. One fourth

D. Half

Answer: B

Watch Video Solution

509. Potted plants are not allowed to remain in room of a patient during night as

A. They consume O_2 at night

B. They release CO_2 at night

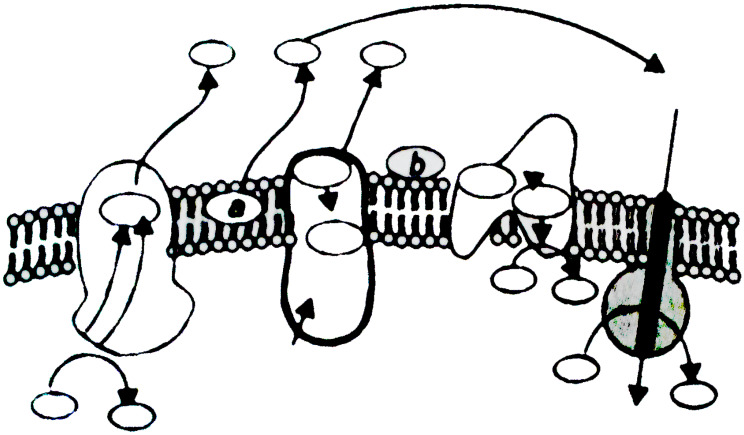
C. They produce CO_2 all the time but release O_2 only during day

D. They do not photosynthesise at night so that they increase CO_2 concentration at night.

Answer: D

Watch Video Solution

510. Observe the diagram. Identify a and b



A. a-CoQ, b-Cyt c

B. a-Cyt c, b-CoQ

C. a-Fes protein, b-FMN

D. a-FMN, b-FeS protein.

Answer: A

Watch Video Solution

511. In C_4 pathway, CO_2 fixation in mesophyll cells is carried out by the enzyme

A. PEP carboxylase

B. Pyruvate dehydrogenase

C. Rubisco

D. Pyruvate decarboxylase.

Answer: A

Watch Video Solution

512. Non-cyclic photophosphorylation is performed by

A. Photolysis of water takes place

B. Only one photosystem participates

C. ATP and NADPH are produced

D. O_2 is released.

Answer: B

Watch Video Solution

513. The plants convert light into chemical energy with a photosynthetic efficiency of

A. 35-41 %

B. 20-35 %

C. 6-20 %

D. 3-6 %.

Answer: D

Watch Video Solution

514. Which one of the following does not play any role in photosynthesis

A. Phycocyanin

B. Phycoerythrin

C. Anthocyanin

D. Xanthophyll.

Answer: C

Watch Video Solution

515. How many PGAL molecules would regenerate 15 RuBP

A. 30

B. 25

C. 15

D. 20

Answer: A

Watch Video Solution

516. Assertion :C_4 photosynthesis is more sensitive to low temperature as compared to C_3 photosynthesis .

Reason : the rubisco found in C_4 plants is more sensitive to low temperature as compared to C_3 plants.

A. Light phase occurs in bundle sheath cells

B. CO_2 fixation occurs in mesophyll cells

C. Light phase occurs in mesophyll cells

D. Photorespiration occurs in mesophyll cells.

Answer: C

Watch Video Solution

517. Photorespiration is also known as

A. C_2 cycle

B. C_3 cycle

C. C_4 cycle

D. C_5 cycle.

Answer: A

Watch Video Solution

518. In C_3 plants, photosynthesis occur in

A. Bundle sheath cells

B. Peroxisomes

C. Mesophyll cells

D. Kranz anatomy.

Answer: C

Watch Video Solution

519. H_2 donor during photosynthesis is

A. $NADH$

B. ATP

C. $NADP$

D. $NADPH.$

Answer: D

Watch Video Solution

520. Rate of phosynthesis is higher in

A. Very high light

B. Red light

C. Green light

D. Continuous light.

Answer: B

Watch Video Solution

521. The pigment present universally in all green oxygenic plants is

A. Xanthophyll

B. Chl a

C. Carotene

D. Phycoxanthin.

Answer: B

Watch Video Solution

522. Raw meterials required for light reactions are

A. ADP and H_2O

B. ADP, H_2O and $NADP$

C. ADP and $NADPH_2$

D. ATP and $NADP$.

Answer: B

Watch Video Solution

523. Which does not show HSK pathway

A. Maize

B. Jowar

C. Sugarcane

D. Sunflower.

Answer: D

Watch Video Solution

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

(A) Z scheme of light reaction takes place in presence of PSI -only. -

(B)Only PSI is functional in cyclic Photophosphorylation results into synthesis of ATP and $NADPH_2$ -

(C) Cyclic Photophosphorylation results into synthesis of ATP and

$NADPH_2$. -

(D)Stroma lamellae lack PS II as well as $NADP$.

A. b and d

B. a and b

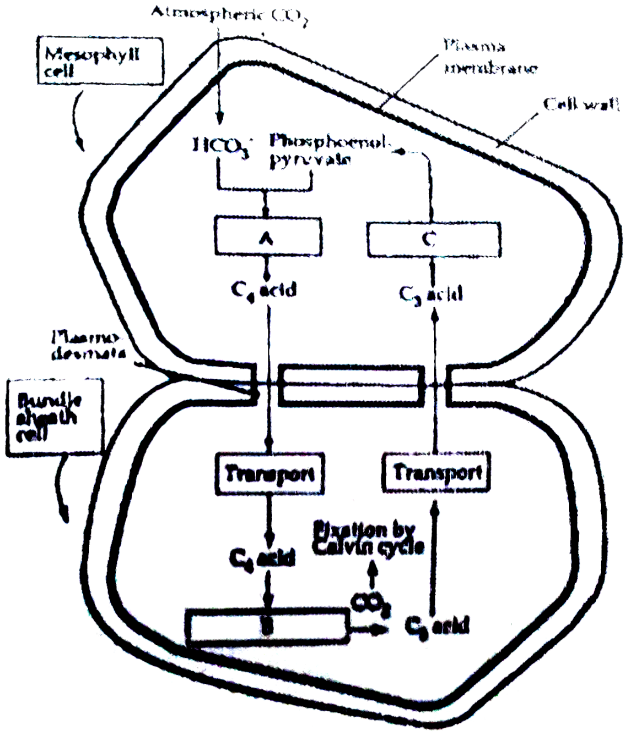
C. b and c

D. c and d

Answer: A

Watch Video Solution

525. Study the pathway given below -



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

	A	B	C
(1)	Fixation	Transamination	Regeneration
(2)	Fixation	Decarboxylation	Regeneration
(3)	Carboxylation	Decarboxylation	Reduction
(4)	Decarboxylation	Reduction	Regeneration

A. a Decarboxylation b Reduction c Regeneration

B. $\begin{matrix} a & b & c \\ \text{Fixation} & \text{Transamination} & \text{Regeneration} \end{matrix}$

C. $\begin{matrix} a & b & c \\ \text{Fixation} & \text{Decarboxylation} & \text{Regeneration} \end{matrix}$

D. $\begin{matrix} a & b & c \\ \text{Carboxylation} & \text{Decarboxylation} & \text{Reduction} \end{matrix}$

Answer: C

Watch Video Solution

526. Quantosome is unit related to

A. Respiration

B. Ascent of sap

C. Growth

D. Photosynthesis.

Answer: D

Watch Video Solution

527. In the C_4 pathway.

A. Xylem parenchyma

B. Phloem parencyma

C. Mesophyll cells

D. Bundle sheath cells

Answer: D

Watch Video Solution

528. In the C_4 pathway.

A. Pyruvic acid

B. PEP A

C. OAA

D. Malic acid.

Answer: D

Watch Video Solution

529. First product of photorespiration is

A. Phosphoglycerate

B. Erythrose 4-phosphate

C. Dihydroxy acetone 3-phosphate

D. All the above.

Answer: A

Watch Video Solution

530. Chlorophyll a has

A. Absorption of green light

B. Red fluorescence

C. Green fluorescence

D. Absorption of red and blue light.

Answer: D

Watch Video Solution

531. Last electron acceptor of PS I is

A. Ferredoxin

B. Cyt b_6

C. Plastocyanin

D. Plastoquinone.

Answer: A

Watch Video Solution

532. In a free radical, the carbon atom carrying unpaired electron is

A. Unpaired and extremely reactive

B. Paired and extremely inactive

C. Unpaired and extremely inactive

D. Paired and extremely reactive.

Answer: A

Watch Video Solution

533. In case of C_4-pathway

A. Epidermal cells

B. Mesophyll cells

C. Bundle sheath cells

D. Guard cells.

Answer: B

Watch Video Solution

534. In Calvin cycle, for synthesis of two molecules of sucrose, the requirement of ATP and NADPH is respectively

A. $3PGAL, 3ATP, 3NADPH_2$

B. $6PGAL, 6ATP, 6NADPH_2$

C. $18PGAL$, $18ATP$, $18NADPH_2$

D. $9PGA$, $9ATP$, $9NADPH_2$.

Answer: B

Watch Video Solution

535. What is the role of photorespiration?

A. Peroxisomes

B. Lysosomes

C. Mitochondria

D. Chloroplasts.

Answer: B

Watch Video Solution

536. Sunken stomata are usually found in

A. Phanerogams

B. C_3 plants

C. CAM plants

D. Insectivorous plants.

Answer: C

Watch Video Solution

537. Compreshension-II

In non-ideal solutions, at one of the intermediate compostions, the total vapour pressure is highest and the boiling point is lowest. At this point, the composition of the liquid and vapour phase is same. So, if liquid mixture vapouriese at this point and vapours are condensed, teh condensate contains same compositon as present in

original liquid mixture. it means at this point liquid behaves like a pure liquid and is called an Azeotropic mixture.

Which of the following cannot form low boiling point azeotrope ?

A. Bryophytes

B. Pteridophytes

C. Heliophytes

D. Sciophytes.

Answer: D

Watch Video Solution

538. A reduction in O_2 evolution occurs when light wavelength is

A. More than 680 nm

B. Less than 680 nm

C. Less then 660 nm

D. 560 nm.

Answer: A

Watch Video Solution

539. Entropy of system depends upon

A. Cyt. F

B. Cyt. b_6

C. Plastocyanin

D. Quinine.

Answer: B

Watch Video Solution

540. RuBisCo occurs in high quantity as it is

A. An oxygenase

B. Catalysing reversible reaction

C. Degraded rapidly

D. Very slow acting enzyme.

Answer: D

Watch Video Solution

541. Write the equation of the net reaction taking place in Hall Heroult electrolytic method for the collection of aluminium ?

A. ATP

B. $NADPH_2$

C. $ATP + NADPH_2$

D. O_2.

Answer: A

Watch Video Solution

542. Electron energy is used to drive protons against concentration gradient across thylakoid membrane into

A. Stroma lamella

B. Thylakoid lumen

C. Stroma

D. Interthylakoid space.

Answer: B

Watch Video Solution

543. Formation of phosphoglyceraldehyde from phosphoglyceric acid is

(a) Hydrolysis

(b) Oxidation

(c) Reduction

(d) Electrolysis

A. Hydrolysis

B. Oxidation

C. Reduction

D. Electrolysis.

Answer: C

Watch Video Solution

544. Photosynthesis is maximum in

A. Orange light

B. Yellow light

C. Blue light

D. Green light.

Answer: C

Watch Video Solution

545. Optimum temperature for photosynthesis is

A. $35^\circ - 40^\circ C$

B. $25^\circ - 35^\circ C$

C. $20^\circ - 25^\circ C$

D. $10^\circ - 15^\circ C$.

Answer: C

Watch Video Solution

546. Select the incorrect match for C_4 cycle

A. Primary CO_2 fixation product $-PGA$

B. Site for initial carboxylation - mesophyll cells

C. Primary CO_2 acceptor $-PEP$

D. C_4 plant- Maize.

Answer: A

Watch Video Solution

547. Which is related to light reaction of photosynthesis

A. In PS II light reaction centre is P_{700}

B. In PS I light reaction centre is P_{680}

C. Photolysis is associated with PS I

D. PS I and PS II are associated in Z-scheme

Answer: D

Watch Video Solution

548. Presence of bundle sheath is a characteristic of

A. C_4 plants

B. Xerophytic plants

C. Grass family

D. C_3 plants.

Answer: A

Watch Video Solution

549. In C_4 plants, bundle sheath cells are characterised by how many features given below? Br i. Large cells, br ii- Having large number of agranal chloroplasts, br iii- Thin walled ,br iv- Impervious to gaseous exchange, br v- Presence of intercellular space.

A. Thin wall for gaseous exchange

B. Rich PEP carboxylase

C. High density of chroplasts

D. Large intercellular spaces.

Answer: C

Watch Video Solution

550. Of the total incident solar radiation the proportion of PAR is

A. Less than 50 %

B. More than 80 %

C. About 70 %

D. About 60 %.

Answer: A

Watch Video Solution

551. CAM helps the plants in

A. Disease resistance

B. Reproduction

C. Conserving water

D. Secondary growth.

Answer: C

Watch Video Solution

552. In Kranz anatomy, the bundle sheath cells have

A. Thick walls, many intercellular spaces and no chloroplasts

B. Thin walls, no intercellular spaces and large number of chloroplasts

C. Thick walls, no intercellular spaces and few chloroplasts

D. Thin walls, many intercellular spaces and several chloroplasts.

Answer: B

Watch Video Solution

553. Which is correct?

A. (a) C_4 plants are more efficient than C_3 plants

B. (b) C_3 plants are more efficient than C_4 plants

C. (c) Photorespiration is useful process

D. (d) Photorespiration is about in C_3 plants

Answer: A

Watch Video Solution

554. Assertion. Protons produced by photolysis accumulate in lumen of thylakoids

Reason. Photolysis occurs in inner membrane of thylakoids

A. If both are true with reason being correct explanation

B. both are true with reason being not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: A

Watch Video Solution

555. Photo-oxidation of water results in the formation of

A. H^+, O_2, ATP

B. H^+, O_2, e^-, ATP

C. H^+, O_2, e^-

D. None of the above.

Answer: C

Watch Video Solution

556. Melvin Calvin was professor of

(a) Botany

(b) Plant physiology

(c) Biochemistry

(d) Chemistry

A. Botany

B. Plant physiology

C. Biochemistry

D. Chemistry.

Answer: D

Watch Video Solution

557. Both phenotypic and genotypic ratio of F_2 are same in

A. 12

B. 13

C. 19

D. 31

Answer: C

Watch Video Solution

558. During Calvin cycle the total number of CO_2 ATP and NADPH molecules utilised and glucose, ADP and NADP molecules generated is

A. 31

B. 36

C. 61

D. 67

Answer: D

Watch Video Solution

559. The cell constant is given by

A. Senebier

B. Mayer and Anderson

C. Rober Mayer

D. Willstatter and stoll.

Answer: D

Watch Video Solution

560. Which is wrongly matched

A. (a) Joseph Priestley - Showed that plants release O_2

B. (b) Jan Ingenhousz - Showed that sunlight is essential for photosynthesis

C. (c) Sachs - Plants produce glucose /starch

D. (d) Engelmann - Green substance is located within special bodies in plants

Answer: D

Watch Video Solution

561. Which is false about C_4 pathway

A. The primary acceptor is a four carbon`C_ compound

B. Bundle sheath cells contain PEP case

C. Enzyme for CO_2 fixation is PEP case

D. Mesophyll cells lack RuBisCO

Answer: B

Watch Video Solution

562. Which statement about photosynthesis are correct

(a) First CO_2 acceptor in C_4 cycle is PGA

(b) In C_3 plants, first stable product of photosynthesis is RuBP

(c) Cyclic photophosphorylation results in formation of ATP

(d) Oxygen liberated during photosynthesis comes from water

A. a and b alone are correct

B. a and c alone are correct

C. c and d alone are correct

D. b and c alone are correct

Answer: C

Watch Video Solution

563. Match the following and choose the correct option from below

A.	Cuticle	i.	guard cells
B.	Bulli form cells	ii.	single layer
C.	Stomata	iii.	waxy layer
D.	Epidermis	iv.	empty colourless cell

A. 1. Mesophyll cell. 2 Bundle sheath cell. 3. Regeneration. 4 Fixation. 5. Decarboxylation

B. 1. Bundle sheath cell 2. Mesophyll cell. 3. Fixation 4. Regeneration 5. Decarboxylation

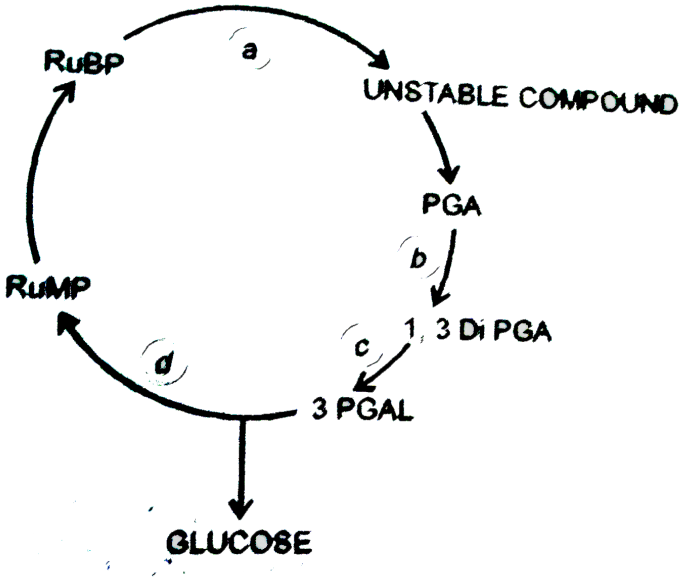
C. 1. Mesophyll cell 2. Bundle sheath cell 3. Decarboxylation 4. Fixation 5. Regeneration

D. 1. Mesophyll cell 2. Bundle sheath cell 3. Fixation 4. Regeneration 5. Decarboxylation

Answer: D

Watch Video Solution

564. Select the option where alphabets are correctly identified



A. a- Regeneration, b- CO_2 fixation, c-Reduction, d-Phosphorylation

B. a-CO_2 fixation, b-Phosphorylation, c-Reduction, d-Regeneration

C. a- CO_2 fixation , b- Phosphorylation, c- Regeneration, d-Reduction

D. a- CO_2 fixation, b-Reduction, c-Phosphorylation, d-Regeneration.

Answer: B

Watch Video Solution

565. Photorespiration produces

A. Sugar but not ATP

B. ATP but no sugar

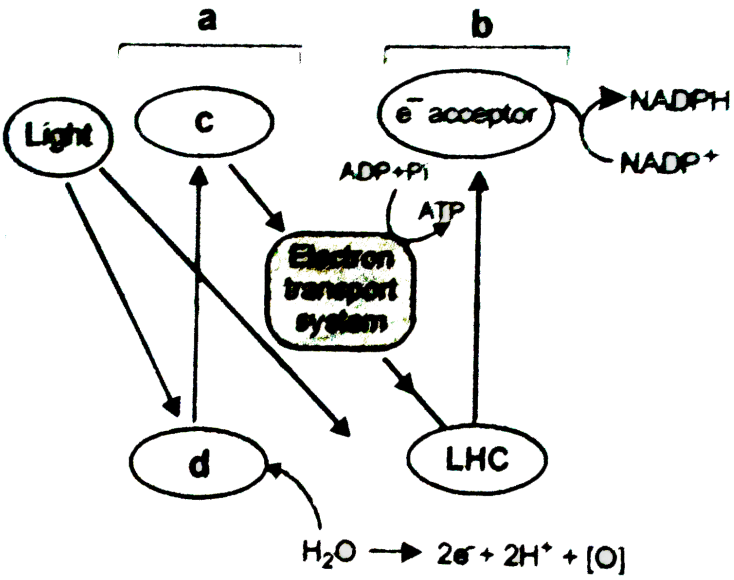
C. Both ATP and Sugar

D. Neither ATP nor sugar.

Answer: D

Watch Video Solution

566. Which is correctly labelled



A. a- PS II, b-PS I, c-e^- acceptor, d- LHC

B. a- e^- acceptor, b-LHC, c-PS II, d- PS I

C. a-LHS, b- e^- acceptor, c-PS I, d- PS II

D. a- PS I, b- PS II, c- e^- acceptor, d- LHC.

Answer: A

Watch Video Solution

567. Which is water soluble?

(a) Phycobilin

(b) Carotene

(c) Xanthophyll

(d) Chlorophyll

A. Phycobilin

B. Carotene

C. Xanthophyll

D. Chlorophyll.

Answer: A

Watch Video Solution

568. Non-cyclic photophosphorylation results in production of

A. (a) ADP

B. (b) ATP

C. (c) $NADPH$

D. (d) ATP and $NADPH$.

Answer: D

Watch Video Solution

569. The first product of C_4 pathway is

A. OAA

B. PGA

C. PGAL

D. DHAP.

Answer: A

Watch Video Solution

570. Which is correct about ΔG?

A. Sodium

B. Potassium

C. Iron

D. Cobalt.

Answer: C

Watch Video Solution

571. Keel is the characteristic feature of flower of :

A. C_4 cycle

B. C_3 cycle

C. Aerobic respiration

D. None of the above.

Answer: B

Watch Video Solution

572. Which one of the following is an example for sub-aerial modification of stem?

A. Red

B. Blue

C. Violet

D. None of the above.

Answer: A

Watch Video Solution

573. In the absence of $NADP^+$, electrons of photosynthetic electron transport system pass to

A. a) II and IV

B. b) I and III

C. c) II and III

D. d) I and IV.

Answer: A

Watch Video Solution

574. How many ATP and NADPH molecuels are respectively required to mae one molecule of glucose through Calvin cycle?

A. $3:1:2$

B. $2:2:1$

C. $2:3:1$

D. $1:2:3$

Answer: D

Watch Video Solution

575. Bundle sheath cells

A. Lack RuBisCO

B. Lack both RuBisCO and PEP carboxylase

C. Are rich in RuBisCO

D. Are rich in PEP carboxylase.

Answer: C

Watch Video Solution

576. Extrusion of electron from reaction centre of PS II leaves a hole which is filled by electron released from

A. (a) H_2O

B. (b) CO_2

C. (c) Chlorophyll

D. (d) Light

Answer: A

Watch Video Solution

577. In photorespiration, glycine passes from

(a) Chloroplast to peroxisome

(b) Chloroplast to mitochondrion

(c) Peroxisome to mitochondrion

(d) Mitochondrion to peroxisome

A. Chloroplast to peroxisome

B. Chloroplast to mitochondrion

C. Peroxisome to mitochondrion

D. Mitochondrion to peroxisome.

Answer: C

Watch Video Solution

578. Reducing power generated during light reaction is used during formation of

A. 3-phosphoglyceraldehyde from RuBP

B. Sucrose from triose phosphate

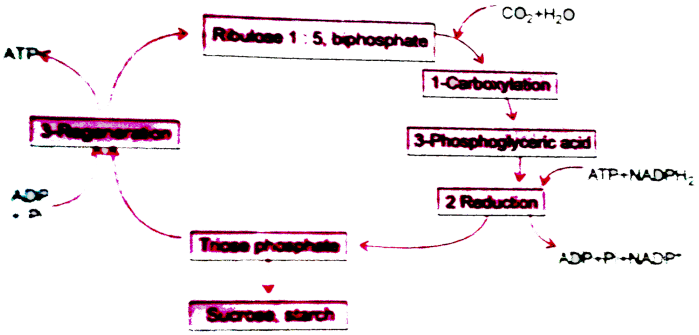
C. Glyceraldehyde 3-phosphate from 3-phosphoglycerate

D. RuBP from triose phosphate.

Answer: C

Watch Video Solution

579. What does the following diagram show



A. Krebs cycle

B. Cyclic photophosphorylation

C. Calvin cycle

D. Non-cyclic photophosphorylation.

Answer: C

Watch Video Solution

580. Which of the following reactions is given by van Niel

A. $2H_2O + CO_2 \xrightarrow{\text{light}} CH_2O + H_2O + O_2$

B. $CO_2 + H_2O \xrightarrow{\text{light}} CH_2O + O_2$

C. $6O_2 + 12H_2O \xrightarrow{\text{light}} C_6H_{12}O_6 + 6H_2O$+6CO_(2)`

D. $2H_2O + CO_2 \xrightarrow{\text{light}} CH_2O + H_2O.$

Answer: A

Watch Video Solution

581. Assimilatory power is

A. $NADPH_2$

B. ATP

C. ATP and $NADPH_2$

D. $FADH_2.$

Answer: C

Watch Video Solution

582. Electrons from excited chlorophyll molecule of photosystem II are first accepted by:

A. Ferredoxin

B. Pheophytin

C. Cytochrome b

D. Cytochrome f.

Answer: B

Watch Video Solution

583. C_4 plants are more efficent in photosynthesis than C_3 plants due to

A. C_4 plants absorb more light

B. C_4 plants absorb more CO_2

C. C_4 plants do not perform photorespiration

D. C_4 plants have more amount of RuBisCO.

Answer: C

Watch Video Solution

584. Assertion. Efficiency of C_4 plants is more than that of C_3 plants

Reason. C_4 plants are more efficient in picking of CO_2

(a) If both the with reason being correct explanation

(b) both are true with reason being not correct explanation

(c) assertion is true but reason is wrong

(d) both are wrong

A. If both the with reason being correct explanation

B. both are true with reason being not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: A

Watch Video Solution

585. Select the characters not applicable to C_3 plants

(i) Primary CO_2 acceptor is PEP

(ii) The plants have RuBisCO

(iii) Initial carboxylation reaction occurs in bundle sheath cells

(iv) Calvin cycle occurs only in bundle sheath cells

(a) iii and iv only

(b) ii, iii and iv only

(c) i and ii only

(d) i, iii and iv only

A. iii and iv only

B. ii, iii and iv only

C. i and ii only

D. i, iii and iv only.

Answer: D

Watch Video Solution

586. Chemiosmotic theory of ATP synthesis in the chloroplasts and mitochondria is based on

(a) Proton gradient

(b) Accumulation of K^+ ions

(c) Accumulation of Na^{2+} ions

(d) Membrane potential

A. Accumulation of K^+ ions

B. Proton gradient

C. Accumulation of Na ions

D. Membrane potential

Answer: B

Watch Video Solution

587. The microelement which is an integral part of electron carrier that transfers electrons electrons from cyt b-f complex to PS I is also a component of

A. Nitrate reductase

B. Cytochrome c-oxidase

C. IAA-oxidase

D. Dinitrogenase.

Answer: B

Watch Video Solution

588. Which is the major photosynthetic pathway in plants

A. C_3

B. C_4

C. CAM

D. None of the above.

Answer: A

Watch Video Solution

589. PAR is

A. Photosynthetically adaptable radiation

B. Photosynthetically accessible radiation

C. Photosynthetic activity radiometry

D. Photosynthetically active radiation.

Answer: D

Watch Video Solution

590. In PS I, the reaction centre chlorophyll a has an absorption peak at

A. 650 nm

B. 660 nm

C. 680 nm

D. 700 nm.

Answer: D

Watch Video Solution

591. The ideal of two pigment systems in light reaction of photosynthesis was given by

A. Arnon

B. Hill

C. Blackman

D. None of the above.

Answer: D

Watch Video Solution

592. Chlorophyll molecules are located in

A. Thylakoid membrane

B. Thylakoid lumen

C. Stroma

D. Inner chloroplast membrane.

Answer: A

Watch Video Solution

593. Q. Identify the correct statement (s) in relation to C_4 photosynthesis

(a) Kranz anatomy is an essential feature for C_4 plants

(b) C_4 plants have higher water use efficiency than C_3 plants

(c) Photorespiration is minimised in C_4 pathway

(d) Conversion of oxaloacetate to malate occurs in bundle sheath cells

A. i) a and b

B. ii) a, b and c

C. iii) b and c

D. iv) b, c and d.

Answer: B

Watch Video Solution

594. Assertion (A). Higher yield in case of bell pepper can be achieved by growing them in CO_2 enriched green houses

Reason (R). Due to higher intracellular CO_2 concentration in bundle sheath cells, RuBisCO mainly acts as carboxylating enzyme

A. A is true but R is false

B. A is false but R is true

C. Both A and R are true and R is correct xplanation of A

D. Both A and R are true but R is not correct explanation of A.

Answer: A

Watch Video Solution

595. The form of carbon used for carboxylation of phosphoenol pyruvate in C_4 plants is

A. H_2CO_3

B. C_2H_4

C. CH_4

D. HCO_3^-

Answer: D

Watch Video Solution

596. Statement a. Photorespiration decreases photosynthetic output.

Statement b. In photorespiratory pathway, neither ATP no NADPH is produced

A. Both the statements a and b are correct

B. Both the statements a and b are wrong

C. Statement a is correct and statement b is wrong

D. Statement b is correct and statement a is wrong.

Answer: A

Watch Video Solution

597. the step at which NADPH is required in Calvin cycle

A. Carboxylation

B. Regeneration

C. Reduction

D. Phosphorylation.

Answer: C

Watch Video Solution

598. Synthesis of one glucose molecule requires- reduced NADP molecules

A. 6

B. 12

C. 18

D. 24

Answer: B

Watch Video Solution

599. Dimorphic chloroplasts occur in

A. Mango

B. Castor

C. Banyan

D. Amaranthus.

Answer: D

Watch Video Solution

600. Enzymes required for photophosphorylation are located in .....

Of chloroplast

A. Peristromium

B. Plastidome

C. Stroma

D. Quantasome.

Answer: D

Watch Video Solution

601. Which statement regarding cycling flow of electrons during light reactions is false

A. The process takes place in stromal lamella

B. ATP synthesis takes place

C. $NADP + H^+$ is synthesised

D. Takes place only when light of wavelength beyond 680 nm is available for excitation.

Answer: D

Watch Video Solution

602. Find out the mismatched pair

A. C_4 plants - Kranz anatomy

B. Primary CO_2 fixation product of C_4 plants -OAA

C. Primary CO_2 acceptor of C_3 plants - RuBP

D. Calvin pathway of C_3 plants occurs in - bundle sheath

Answer:

Watch Video Solution

603. Read the given statements and selct the correct option.

Statement 1: Photorespiration interferes with the successful

functioning of Calvin cycle.

Statement 2: Photorespiration oxidises ribulose-1,5 biphosphate which is an acceptor of CO_2 in Calvin cycle.

A. If both the with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: A

Watch Video Solution

604. Assertion. In light reaction of photosynthesis, light is required for the functioning of PS I and PS II and Production of NADPH and ATP.

Reason. Dark reaction does not occur in light.

A. If both the with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: C

Watch Video Solution

605. Q. Carbon dioxide is necessary for photosynthesis. The chemical used to remove this gas most effectively from entering a control apparatus is

A. a) Calcium oxide

B. b) Distilled water

C. c) Potassium hydroxide solution

D. d) Sodium carbonate.

Answer: C

Watch Video Solution

606. Chromatophores taken part in

A. Photosynthesis

B. Growth

C. Movements

D. Respiration.

Answer: A

Watch Video Solution

607. In photosynthesis, the light independent reactions take place at

A. Thylakoid lumen

B. Photosystem I

C. Photosystem III

D. Stromal matrix.

Answer: D

Watch Video Solution

608. Q. Mn, Ca and Cl present in PS II play an important role in

A. a) Absorption of light

B. b) CO_2 assimilation

C. c) Photolysis of water

D. d) ATP synthesis.

Answer: C

Watch Video Solution

609. The visible portion of light spectrum useful in photosynthesis is referred to as

A. RFLP

B. PAR

C. VAM

D. VNTR.

Answer: B

Watch Video Solution

610. The time taken from the fixation of CO_2 to the formation of one glucose molecules is about..... Seconds

A. 20

B. 40

C. 60

D. 90

Answer: D

Watch Video Solution

611. Which one of the following is a CAM plant

A. Maize

B. Kalanchoe

C. Sugarcane

D. Jowar.

Answer: B

Watch Video Solution

612. Photorespiration is favoured by

A. Hydrolase

B. Oxygenase

C. Carboxylase

D. ATPase.

Answer: B

Watch Video Solution

613. This is not a C_3 plant

A. Amaranth

B. Rice

C. Wheat

D. Potato.

Answer: A

Watch Video Solution

614. An example of CAM plant is

A. Black Nightshade (Salanum nigrum)

B. Lemon Grass (Cymbopogon flexuosus)

C. Sugarbeet (Beta vulgaris)

D. Snake Plant (Sanseveria trifasciate).

Answer: D

Watch Video Solution

615. C_4 pathway is advantageous over C_3 pathway in plants as it

A. Occurs in relatively low CO_2 concentration

B. Uses more amount of water

C. Occurs in relatively low O_2 concentration

D. Is less efficient in energy utilisation.

Answer: A

Watch Video Solution

616. ATP synthesis in cell requires

A. H^+ gradient across the membrane

B. K^+ gradient across the membrane

C. PO_4^{3-} gradient across the membrane

D. Ca^{2+} gradient across the membrane.

Answer: A

Watch Video Solution

617. Number of ATP molecules formed from 8 molecules of water due to noncyclic electron transport and subsequent photophosphorylation is

A. 8

B. 4

C. 16

D. 12

Answer: C

Watch Video Solution

618. Correct sequence of involvement of the following in noncyclic electron transport

(i) PC (ii) PQ (iii) $Pheo$ (iv) Fd

A. ii, i, iii, iv

B. iii, ii, iv, i

C. iv, i, ii, iii

D. $iii, ii, i, iv.$

Answer: D

Watch Video Solution

619. Choose the correct statement

A. Stroma lamella membrane lacks PS II and PS I

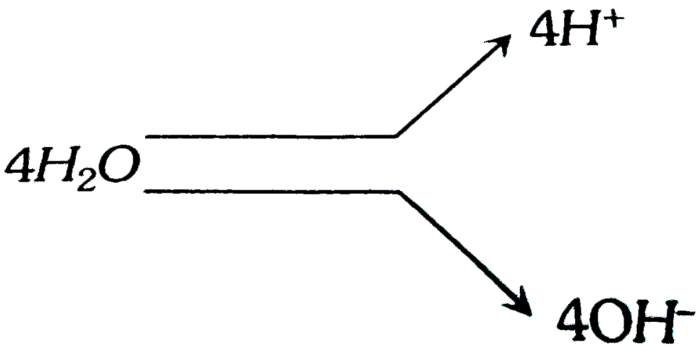
B. When PS I is functional, electron flow in a noncyclic way

C. ATPase enzyme consists of F_0 and F_1 units

D. NADP reductase is a part of PS II.

Answer: C

Watch Video Solution



620.

Q. In this process which of the following play important role

A. a) Chlorophyll

B. b) Light energy

C. c) Ca, Mn, Cl

D. d) All the above.

Answer: D

Watch Video Solution

621. How many molecules of ATP and NADPH are required to make one molecule of glucose?

A. 36 ATP, 24 NADPH, 12 Calvin cycles

B. 36 ATP, 24 NADPH, 6 Calvin cycles

C. 18 ATP, 12 NADPH, 6 Calvin cycles

D. 24 ATP, 36 NADPH, 12 Calvin cycles

Answer: A

Watch Video Solution

622. During photorespiration, the oxygen consuming reaction(s) occur in

A. Glycolate, glucine

B. Serine, glycine

C. Glycine, glycerate

D. Phosphoglycerate glycolate.

Answer: C

Watch Video Solution

623. The enzyme resonsible for primary carboxylation in C_3 plants is

A. Hexokinase

B. RuBP carboxylase-oxygenase

C. Pyruvate carboxylase

D. Succinate dehydrogenase.

Answer: B

Watch Video Solution

624. What is the quantum yield of photosynthesis

A. $33\ \%$

B. $9\ \%$

C. $12\ \%$

D. $78\ \%$

Answer: C

Watch Video Solution

625. 3-phosphoglyceric acid as first CO_2 fixation product in algal photosynthesis was discovered by

A. Priestley

B. Ingenhousz

C. Engelman

D. Calvin.

Answer: D

Watch Video Solution

626. Match and find the correct combination

(a)	Chlorophyll a	(i)	Yellow
(b)	Chlorophyll b	(ii)	Bright or blue green
(c)	Xanthophyll	(iii)	Yellow, yellow orange
(d)	Carotenoids	(iv)	Yellow green

A. a-ii, b-iv, c-i, d-iii`

B. a-iii, b-iv, c-ii, d-i

C. a-iv, b-iii, c-ii, d-i

D. a-iv, b-ii, c-i, d-iii

Answer: A

Watch Video Solution

Watch Video Solution

627. Maximum absorption of light occures in the region (PAR) of

A. a and b only

B. b and c only

C. a and d only

D. b and d only

Answer: A

Watch Video Solution

628. Cyclic photophosphorylation results in the formation of

A. $NADPH + H^+$

B. ATP and $NADPH + H^+$

C. ADP

D. ATP

Answer: D

Watch Video Solution

629. How many molecules of ATP and NADPH are required to make one molecule of glucose?

A. 8

B. 18

C. 28

D. 2

Answer: B

Watch Video Solution

630. Oxygen released in photosynthesis is formed during

A. Oxidative phosphorylation

B. Cyclic photophosphorylation

C. Noncyclic photophosphorylation

D. Carbon assimilation during dark reactions.

Answer: C

Watch Video Solution

631. The strong inhibitor substance for PS II in photosynthesis is

A. Ethylene

B. Chloroform

C. Dichlorophenyl dimethyl urea

D. Yellow light.

Answer: C

Watch Video Solution

632. The common feature in CAM and C_4 plants is

A. Stomata open only during night

B. Acid concentration increases during night

C. Both C_3 and C_4 pathways occur

D. Having kranz anatomy.

Answer: C

Watch Video Solution

633. Photosynthesis is considered as an oxidation reaction, because

A. CO_2 is oxidised

B. H_2O is oxidised

C. O_2 is released

D. (CH_2O) is oxidised

Answer: B

Watch Video Solution

634. A plant is provided with ideal conditions for photosynthesis and supplied with isotope $.^{14}CO_2$. When the products of the process are analysed carefully, what would be nature of products

A. Both glucose and oxygen are labelled

B. Only oxygen is labelled but glucose is normal

C. Both glucose and oxygen are normal

D. Only glucose is labelled and oxygen is normal.

Answer: D

Watch Video Solution

635. Evolution of oxygen during photosynthesis is a

A. Light reaction

B. Dark reaction

C. Respiratory influence

D. Both light and dark reactions.

Answer: A

Watch Video Solution

636. Which of the following statements is characteristic feature of CAM plants

A. Release oxygen during day

B. Release oxygen during night

C. Open their stomata during night

D. Do not respire during dat.

Answer: C

Watch Video Solution

637. Magnesium in chlorophyll molecule is located in

A. Centre of porphyrin head

B. Corner of porphyrin head

C. Phytol tail

D. None of the above.

Answer: A

Watch Video Solution

638. Which set of pigments are involved in green plant photosynthesis

A. Chlorophylls, carotenoids and anthocyanins

B. Chlorophylls, carotenoids and betacyanins

C. Chlorophylls, carotenoids and phycobilins

D. Chlorophylls, carotenes and xanthophylls.

Answer: D

Watch Video Solution

639. CAM plants open their stomata during night only because they tend to

A. Pormote the rate of light reaction

B. Promote rate of dark reaction

C. Minimise rate of transpiration

D. Maximise rate of transpiration.

Answer: C

Watch Video Solution

640. Which statement is not correct about photosynthesis in Ficus religiosa

A. It releases O_2 during day

B. It releases oxygen during night

C. It release CO_2 during night

D. It releases CO_2 and O_2 during day.

Answer: B

Watch Video Solution

641. What conclusion was drawn from red drop and enhanement experiments in the light reaction of photosynthesis

A. Two photosystems are present

B. One photosystem is present

C. Two photosystems are present which work at different wavelengths

D. Two photosystems are present which work at some wavelength.

Answer: C

Watch Video Solution

642. How many ATPs are required by C_4 plants in synthesis of one molecule of glucose

A. 18 ATP

B. 30 ATP

C. 12 ATP

D. None of the above.

Answer: B

Watch Video Solution

643. Light reaction during photosynthesis takes place in

A. Outer surface of chloroplast envelope

B. Stroma

C. Thylakoid membrane

D. Inner surface of chloroplast envelope.

Answer: C

Watch Video Solution

644. Which of the following statements about cyclic photophosphorylation is not correct?

A. O_2 is not released

B. Photolysis of water does not take place

C. No NADH is produced

D. Only P_{680} is involved.

Answer: D

Watch Video Solution

645. What did Engelmann observe from his prism experiments

A. Bacteria could not detect the sites of O_2 evolution

B. Bacteria released excess carbon dioxide in red and blue light

C. Bacteria accumulated due to increase in temperature caused by increase in O_2 concentration.

D. Bacteria are accummulated towards red and blue light.

Answer: D

Watch Video Solution

646. How many NADPH and ATP molecules are used in Calvin cycle for production of trioses required for synthesis of 6 surcose molecules

A. 144 NADPH, 216 ATP

B. 288 NADPH, 432 ATP

C. 144 NADPH, 288 ATP

D. 72 NADPH, 108 ATP.

Answer: A

Watch Video Solution

647. Photosynthetic reaction centre from photosynthetic bacterium was crystallised by

A. Gulirrez

B. Burnell and Hatch

C. Fluggs and Heldt

D. Hunber, Mutchel and Deisenhofer.

Answer: D

Watch Video Solution

648. Choose the correct option for the chloroplast of bundle sheath from the following

A. They show grana organisation

B. They do not show grana organisation

C. They do not possess, thylakoids.

D. They possess thylakoid and grana organisation.

Answer: B

Watch Video Solution

649. Splitting of water molecules during light reaction of photosynthesis is associated with (a) PS I resulting the release of O_2 , protons and transfer of electrons to PS II (b) PS II resulting in release of O_2, protons and transfer of electrons to PS I (c) PS II resulting in release of O_2, protons and transfer of electrons to PS II (d) PS I resulting in the release of O_2, protons and transfer of electrons to PS I.

Of the above statements

A. a alone is correct

B. b alone is correct

C. c alone is correct

D. d alone is coorect

Answer: B

Watch Video Solution

650. Kranz anatomy is not seen in (i) Maize (ii) sorghum (iii) Tomato.

A. i and ii

B. i and ii

C. i only

D. iii only

Answer: D

Watch Video Solution

651. On photorespiration the number of ATP and NADPH synthesised are respectively

A. 1 and 3

B. 2 and 3

C. 3 and 4

D. O and O

Answer: D

Watch Video Solution

652. Photo-respiratory reactions are operated in

A. Chloroplasts, ribosomes and peroxisomes

B. Chloroplasts, mitrochondria and peroxisomes

C. Mitochndria, peroxisomes and lysosomes

D. Mitochondria, chloroplasts and ribosomes.

Answer: B

Watch Video Solution

653. Stomata remain open at night in

A. C_3 plants

B. C_4 plants

C. CAM plants

D. Hydrophytic plants.

Answer: C

Watch Video Solution

654. The entire reactions of C_4 pathway take place in

A. Mesophyll and bundle sheath

B. Vascular bundle and palisade tissue

C. Mitochondria and peroxisomes

D. Bundle sheath and endoplasmic reticulum.

Answer: A

Watch Video Solution

655. A plant in your garden avoids photorespiratory losses, has improved water use efficiency, shows high rates of photosynthesis at high temperatures and has improved efficiency of nitrogen utilisation. In which of the following physiological groups would you assign this plant?

A. Nitrogen fixer

B. C_3

C. C_4

D. CAM.

Answer: C

Watch Video Solution

656. Emerson's enhancement effect and Red drop have been instrumental in the discovery of

A. Oxidative phosphorylation

B. Photophosphorylation and noncyclic electron transport

C. Two photosystems operating simultaneously

D. Photophosphorylation and cyclic electron transport

Answer: C

Watch Video Solution

657. In a chloroplast the highest number of pro- tons are found in

A. Antenna complex

B. Stroma

C. Lumen of thylakoids

D. Inter-membrane space

Answer: C

Watch Video Solution

658. The process which makes major difference between C_3 and C_4 plants is

A. Respiration

B. Glycolysis

C. Calvin cycle

D. Photorespiration.

Answer: D

Watch Video Solution

659. Assertion : CAM plants lack structural compartmentation of leaf as found in C_4 plants.

Reason : Stomata of CAM plants are open during the day.

A. If both are true with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: C

Watch Video Solution

660. Assertion : Photorespiration is a useful process where there is no synthesis of ATP energy.

Reason : RuBisCO is present in mesophyll cells of C_4 plants, hence they show more productivity.

A. If both are true with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion is true but reason is wrong

D. both are wrong.

Answer: C

Watch Video Solution

661. C_4 plants have better productivity because

A. C_4 plants absorb more light

B. C_4 plants absorb more CO_2

C. C_4 plants lack photorespiration

D. All the above.

Answer: D

Watch Video Solution

662. With reference to factors affecting the rate of photosynthesis, which of the following statements is not correct?

A. Light saturation for CO_2 foxation occurs at 10 % of full sunlight

B. Increasing atmspheric CO_2 concentration upto 0.05 % can enhance CO_2 fixation rate

C. C_3 plants respond to higher temperature with enhanced photosynthesis while C_4 plants have much lower temperature optimum.

D. Tomato is a greenhouse crop which can be grown in CO_2 enriched atmosphere for higher yield.

Answer: C

Watch Video Solution

Cyg

1. Solar radiations contain ultraviolet radiations of wavelength

A. 100-390 nm

B. 300-390 nm

C. 100-200 nm

D. 200-390 nm.

Answer:

Watch Video Solution

2. Soil humus theory of plant nourishment was given by

A. Aristole

B. Liebig

C. Von Helmont

D. Ingen-Housz.

Answer: B

Watch Video Solution

3. Chlorophyll a is called universal photosynthetic pigment because it occurs in

A. All photoautotrophs

B. All eucaryotic photoautotrophs

C. All oxygenic photoautotrophs

D. Both oxygenic and anoxygenic photoautotrophs.

Answer:

Watch Video Solution

4. Which one is Hill oxidant ?

A. Indophenol

B. Dichlorophenol

C. Ferricyanide, chromate and benzoquinone

D. All the above.

Answer:

Watch Video Solution

5. The action spectrum of photosynthesis was discovered by

A. Calvin

B. Engelmann

C. Blackman

D. Hill.

Answer:

Watch Video Solution

6. Girdling experiments cannot be successful in case of Cucurbita because it

A. Does not possess secondary growth

B. Has scattered vascular bundles

C. Possesses bicollateral bundles

D. All the above.

Answer:

Watch Video Solution

7. First transitory chemical formed by reaction between CO_2 and $RuBP$ is

A. $PGAL/GAP$

B. PGA

C. Dihydroxy acetone phosphate

D. 2-Carboxy 3 keto biphosphosphoribotol.

Answer:

Watch Video Solution

8. $RuBP$ occurs in

A. All photosynthetic tissues

B. C_4 plants

C. CAM plants

D. Both C_4 and CAM plants.

Answer:

Watch Video Solution

9. The Scientist who discovered atmospheric CO_2 concentration to be suboptimal for photosynthesis is

A. Godlewski

B. Bossingault

C. Dutrochet

D. De Saussure.

Answer:

Watch Video Solution

10. Wilmott's bubbler is meant for providing

A. (a) CO_2 is necessary for photosynhesis

B. (b) Light is necessary for photosynthesis

C. (c) Oxygen is evolved during photosynthesis

D. (d) Chlorophyll is essential for photosynthesis.

Answer:

Watch Video Solution