BIOLOGY

BOOKS - CHETANA BIOLOGY (MARATHI ENGLISH)

Photosynthesis

Example

1. What is photosynthesis? Give its summary equation?

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2. Write a note on the sources of CO_2 fixed by plants.

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3. All life on earth is bottled solar energy. Justify.

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4. Where are chloroplasts found? What is the chemical composition of chloroplast membrane?

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5. Name the two types of raw materials used in the process of photosynthesis?

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6. Sketch and label: Ultrastructure of chloroplast.

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7. Describe the ultrastructure of a chloroplast.

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8. Describe the ultrastructure of a chloroplast.

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9. Which reactions of photosynthesis occur in the grana and stroma of the chloroplast?

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10. How many membranes are found in the chloroplast? Name them.

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11. What is the shape of chloroplasts in higher plants?

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12. Enlist the functions of chloroplast.

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13. Name the two types of living organisms in which chloroplasts are found?

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14. Differentiate between grana and stroma.

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15. How do photosynthesis bacteria that lack chloroplasts conduct photosynthesis?

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16. Are the enzymes that catalyse the dark reacitons of carbon fixation located inside the thylakoids or outside the thylakoids?

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17. The photosynthetic lamellae taken out from a chloroplast and suspended in a nutrient medium in the presence of CO_2 and light. Will they synthesize sugar or not?

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18. Define Stroma.

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19. Define Grana.

Watch Video Solution

20. Define Thylakoids.

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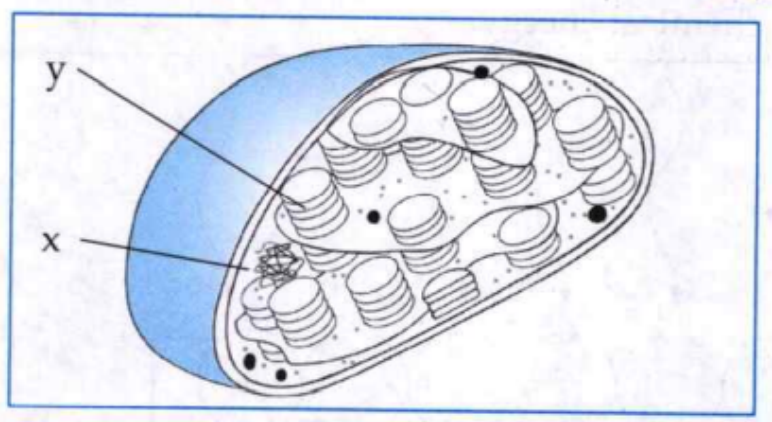
21. Observe the figure below and answer the following questions.

(i) Label x and y and name the metabolic processes taking place in them.



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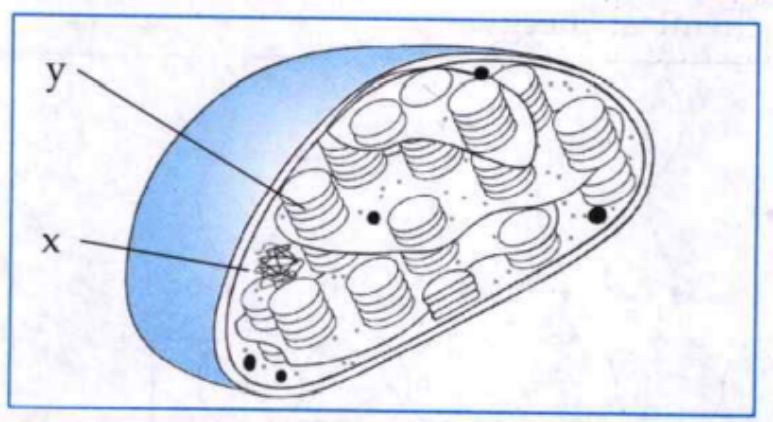
22. Observe the figure below and answer the following questions.

Is this structure seen in plant cells or animals cells?



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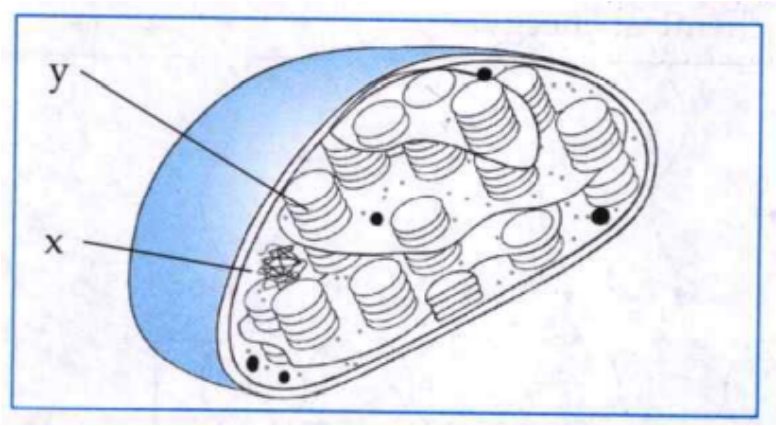
23. Observe the figure below and answer the following questions.

Can they be passed on to the offspring? How?



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24. What are plastoglobules?

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25. Describe the different types of photosynthetic pigments.

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26. Explain the role of the different photosynthetic pigment.

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27. Write a short note on the characteristics of photosynthetic pigments.

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28. Where are photosynthetic pigments found?

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29. Describe the chemical structure of a chlorophyll molecules.

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30. Why is chlorophyll-a called an essential pigment?

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31. Describe the role of accessory pigments during photsynthesis.

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32. How is light energy transferred by the accessory pigments during photosynthesis?

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33. Describe the role of Chlorophyll-a.

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34. Describe the role of Chlorophyll-b.

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35. Describe the role of Carotenoids.

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36. What would happen if plants did not have accessory pigments?

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37. Tomatoes, carrots and chillies are red in colour due to the presence of pigments. Name the pigment.

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38. Enlist the photosynthesis pigments?

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39. Differentiate between chlorophyll-a and chlorophyll-b

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40. Draw well labelled diagram of chloroplast.

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41. What is a photon?

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42. What do you understand by the term 'quantum'.

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43. Define quantum.

Watch Video Solution

44. What is visible light?

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45. Write a note on absorption spectrum.

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46. Write a note on action spectrum.

Watch Video Solution

47. Action and absorption spectrum of photosynthesis overlap.'Explain.

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48. Considering the fact that aquatic photosynthesis accounts for 90% of the total photosynthesis, explain how photosynthetic organisms living at different depths of the

ocean are able to adapt to perform photosynthesis.

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49. Distinguish between

action spectrum and absorption spectrum.

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50. Explain the source of oxygen in photosynthesis.

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51. Write short notes on

(i) Van Neil's experiment

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52. Why is photosynthesis considered to by a redox reaction?

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53. Define photolysis of water.

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54. Give the equations of Van Neil's experiment.

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55. Give the equations of Ruben's experiment.

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56. What does Hill's reaction prove?

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57. Name the hydrogen acceptor in Hill's reaction.

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58. What does Hill's reaction prove?

Watch Video Solution

59. Name the substance that functions as a hydrogen acceptor in plants during photolysis of water.

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60. What does NADP function as during the process of photolysis of water.

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61. Name the radioactive element used by Ruben.

Watch Video Solution

62. Name the algae used in Ruben's experiment.

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63. Does moonlight support photosynthesis?

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64. What are the two main reacions in the process of photosynthesis?

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65. What do you understand by. Quantum energy

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66. What do you understand by the terms in question. Quantum yield

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67. What do you understand by the term in question. Excited state of chlorophyll-a

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68. What do you understand by the term in question. Ground state of chlorophyll-a molecule.

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69. What do you understand by the terms in question. Proton gradient

Watch Video Solution

70. What do you understand by write the terms in question. Reducing power of a cell

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71. What are antennae molecules? What is their role?

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72. Describe the role of Chlorophyll-a.

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73. Describe the role of light with respect to ATP synthesis

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74. Describe the role of light with respect to Photolysis of water

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75. Describe the role of light with respect to Release of Oxygen

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76. Describe the role of light with respect to Synthesis of $NADPH_2$

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77. Distinguish between PS-I and PS-II.

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78. With the help of a well labelled diagram explain photo-excitation of chlorophyll-a.

Watch Video Solution

79. Define Pigment Systems.

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80. What made Hill to perform his experiment?

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81. Explain why chlorophyll appears green in reflected light and red in transmitted light. Explain the significance of these phenomena in terms of photosynthesis.

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82. Define photophosphorylation. Give an equation to show ATP formation by photophosphorylation.

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83. Describe the process of cyclic photophosphorylation.

Watch Video Solution

84. Give the diagrammatic representation of cyclic photophosphorylation.

Watch Video Solution

85. Give the diagrammatic representation of cyclic photophosphorylation.

Watch Video Solution

86. Describe the process of non-cyclic photophosphorylation.

Watch Video Solution

87. Describe the process of non-cyclic photophosphorylation.

Watch Video Solution

88. Describe the process of non-cyclic photophosphorylation.

Watch Video Solution

89. Why is light reaction also called photochemical phase of photosynthesis?

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90. Why is light reaction also called photochemical phase of photosynthesis?

Watch Video Solution

91. What are the types of photophosphorylation?

Watch Video Solution

92. Where does photophosphorylation occur?

Watch Video Solution

93. Describe the process of cyclic photophosphorylation.

Watch Video Solution

94. Describe the process of non-cyclic photophosphorylation.

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95. Write a note on the significance of cyclic phosphorylation.

96. Write a note on the significance of non-cyclic photophosphorylation.

97. Draw a flow chart of non-cyclic photophosphorylation.

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98. What are Cytochromes?

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99. Electrons donated by chl-a molecules during the process of non-cyclic

photophosphorylation do not come back to the same chlorophyll molecule. Justify.

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100. Why is photolysis of water accompanied with non-cyclic photphosphorylation?

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101. Describe the light dependent steps of photosynthesis. How are they linked to the

dark reaction?

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102. Under which conditions will cyclic photophosphorylation occur?

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103. Differentiate between cyclic and non-cyclic photophosphorylation.

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104. Define chemiosmosis.

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105. How does the process of chemiosmosis help in the generation of ATP?

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106. How does the process of chemiosmosis help in the generation of ATP?

Watch Video Solution

107. Explain the mechanism of ATP synthesis through chemiosmosis.

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108. Give an account of chemiosmotic hypothesis/proton pump.

Watch Video Solution

109. Sketch and label: ATP synthesis through chemiosmosis.

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110. Name the enzyme that synthesizes ATP through chemiosmosis.

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111. Name the enzyme that reduces NADP to $NADPH_2$.

Watch Video Solution

112. Where is the NADP reductase enzyme found in the chloroplast? State its role.

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113. What do you understand by dark reactions?

Watch Video Solution

114. Which is the ultimate pathway for fixing CO_2 into glucose?

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115. Dark reactions are also known as Blackman's reactiosn or biochemical reactions'. Give reasons.

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116. Why are dark reactions also called thermochemical reactions?

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117. Name the scientists who discovered the path of carbon in C_3 cycle.

Watch Video Solution

118. Which is the radioactive isotope of carbon, used for tracing its path in dark reactions?

Watch Video Solution

119. What is the role of the assimilatory power in dark reaction?

Watch Video Solution

120. Write a note on relation between light and dark reaction.

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121. Light and dark reactions are interdependent upon each other'. Explain.

Watch Video Solution

122. Write a note on relation between light and dark reaction.

Watch Video Solution

123. Why are the dark reactions also called Calvin's cycle?

Watch Video Solution

124. Which is the first stable compound of C_3 pathway.

Watch Video Solution

125. Describe Calvin cyle.

Watch Video Solution

126. Give an account of Calvin's cycle.

Watch Video Solution

127. Write a note on significance of C_3 cycle.

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128. 18 ATP and $12NADPH_2$ molecules are required in dark reaction.' Explain.

Watch Video Solution

129. 6 turns of C_3 cycle are requred to generate one molecule of glucose.' Give reasons.

Watch Video Solution

130. Calvin cycle consists of three phases, what are they? Explain the significance of each of them.

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131. Dark reactions cannot take place during the day'. Is this statement true or false?

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132. Define Photorespiration.

Watch Video Solution

133. In which cell organelles do photorespiration takes place.

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134. RuBisCo is an enzyme that acts both as a carboxylase and oxygenase. Discuss.

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135. Under what conditions does RuBisco function as an oxygenase?

Watch Video Solution

136. How is photorespiration useful to plants?

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137. Why is photorespiration called a wasteful process.

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138. What are the disadvantages of photorespiration?

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139. Where does the C_4 pathway occur?

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140. Why is the C_4 pathway called dicarboxylic acid pathway?

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141. Which is the type of anatomy shown by C_4 plants.

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142. What are dimorphic chloroplasts?

Watch Video Solution

143. Which type of plants show the C_4 pathway. Give examples.

Watch Video Solution

144. Describe the HSK pathway.

Watch Video Solution

145. Which type of plants show the C_4 pathway. Give examples.

Watch Video Solution

146. Write a note on anatomical peculiarities seen in C_4 plants.

Watch Video Solution

147. Describe the HSK pathway.

Watch Video Solution

148. Name the first stable product of C_4 pathway.

Watch Video Solution

149. Write a note on the significance of C_4 cycle.

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150. 30 ATP and $12NADPH_2$ are required for the formation of one molecule of glucose in the C_4 pathway'. Justify.

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151. What do you understand by Kranz anatomy?

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152. Chloroplasts show dimorphism in C_4 plants.

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153. C_4 plants are more efficient than C_3 plants. Discuss.

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154. Why do C_4 plants need to follow an alternative pathway for CO_2 fixation.

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155. What are the steps that are common to C_3 and C_4 photosynthesis?

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156. Why is the C_4 cycle also called the HSK pathway?

Watch Video Solution

157. Explain how photorespiration is avoided in C_4 plants.

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158. Why does RuBisCo carry out preferential carboxylation than oxygenation in plants.

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159. How can you identify whether the plant is C_3 and C_4. Explain.

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160. What would have happened if C_4 plants did not have Kranz anatomy?

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161. In C_4 plants, bundle sheath cells carrying out Calvin's cycle are very few in number. Then also C_4 plants are highly productive. Explain.

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162. In C_4 plants, why is C_3 pathway operated to bundle sheath cells only?

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163. Differentiate between C_3 and C_4 plants.

Watch Video Solution

164. Differentiate between C_3 and C_4 plants.

Watch Video Solution

165. Differentiate between chloroplasts of mesophyll and bundle sheath of C_4 plants.

Watch Video Solution

166. Which type of plants follow the CAM pathway? Give examples.

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167. Why was the CAM pathway so named?

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168. CO_2 enters the stomata only during the night. Explain/Give reasons.

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169. `Crassulacean Acid Metabolism is beneficial to xerophytes.' Justify.

Watch Video Solution

170. Which type of plants follow the CAM pathway? Give examples.

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171. What do you understand by Crassulacean Acid Metabolism?

Watch Video Solution

172. What is translocation of food in plants. Explain.

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173. Xerophytic plants survive in high temperature.

Watch Video Solution

174. Describe the CAM pathway.

Watch Video Solution

175. With the help of a schematic representation describe glycolysis.

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176. Explain how photosynthesis takes place during the day inspite of stomata being closed in certain plants.

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177. How does fixation and reduction of CO_2 in CAM pathway take place?

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178. Succulents are known to close their stomata during the day. How do they meet their photosynthetic CO_2 requirement?

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179. Summarise photosynthetic reaction.

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180. Compare C_4 and CAM plants.

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181. Write a note on the external factors that affect photosynthesis.

Watch Video Solution

182. Write a note on the external factors that affect photosynthesis.

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183. State Blackman's Law of limiting factors.

Watch Video Solution

184. State Blackman's Law of limiting factors.

Watch Video Solution

185. Short plants growing under the thick canopy of a rainforest receive filtered light but still perform photosynthesis. Explain.

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186. Enlist the internal factors that affect photosynthesis.

Watch Video Solution

187. Distinguish between light and dark reaction.

188. Distinguish between Photorespiration and Respiration.

189. Write a short note on the significance of photosynthesis.

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190. Why is photosynthesis considered to be the most important process in the biosphere?

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Exercise

1. A cell that lacks chloroplast does not

A. evolve carbon dioxide

B. liberate oxygen

C. require water

D. utilize carbohdrates

Answer:

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2. Energy is transferred from the light reaction step to the dark reaction step by.

A. chlorophyll

B. ADP

C. ATP

D. RuBP

Answer:

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3. Which one is wrong in photorespiration.

A. It occur 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:

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4. Non-cyclic photophosphorylation differs from cyclic photophosphorylation in that the form

A. Involves only PS I

B. include evolution of O_2

C. involves formation of assimilatory power

D. both 'b' and 'c'

Answer:

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5. For fixation of 6 molecules of CO_2 and formation of one molecule of glucose in Calvin cycle, requires.

A. 3 ATP and $2NADPH_2$

B. 18 ATP and $12NADPH_2$

C. 30 ATP and $18NADPH_2$

D. 6 ATP and $6NADPH_2$

Answer:

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6. In maize and wheat the first stable products formed in mesophyll and in bundle sheath cells respectively are.

A. OAA and PEPA

B. OAA and OAA

C. OAA and 3PGA

D. 3PGA and OAA

Answer:

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7. C_4 pathway is also called as dicarboxylation pathway because.

A. $RuBP + CO_2$ in bundle sheath cells

B. $PEPA + CO_2$ in mesophyll cells

C. both 'a' and 'b'

D. it occurs in presence of intensive light

Answer:

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8. The head and tail of chlorophyll are made up of.

A. porphyrin and phytol respectively

B. pyrrole and tetrapyrrole respectively

C. prophyrin and phyrol respectively

D. tetrapyrole and pyrrole respectively

Answer:

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9. The net results of photo-oxidation of water is release of.

A. electron and proton

B. proton and oxygen

C. proton, electron and oxygen

D. electron and oxygen

Answer:

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10. For fixing one molecule of CO_2 in Calvin cylce, are required.

A. $3ATP + 1NADPH_2$

B. $3ATP + 2NADPH_2$

C. $2ATP + 3NADPH_2$

D. $3ATP + 3NADPH_2$

Answer:

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11. 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:

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12. The sequential order in electron transport from PS-II and PS-I of photosynthesis is.

A. FeS, PQ, PC and Cytochrome

B. FeS, PQ, Cytochrome and PC

C. PQ, Cytochrome, PC and FeS

D. PC, Cytochrome, FeS, PQ

Answer:

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13. Oxygen liberated from photosynthesis process comes from..... .

A. CO_2

B. glucose

C. H_2O

D. chlorophyll

Answer:

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14. Which of the following is not required for Hill reaction?

A. sunlight

B. chlorophyll

C. water

D. CO_2

Answer:

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15. PS-I gets the de-energised electron from..... .

A. water

B. plastoquinone

C. plastocyanin

D. cyt-f

Answer:

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16. Which of the following was used in the study of dark reactions of photosynthesis?

A. Hydrilla

B. Chlorella and Scenedesmus

C. Chlamydomonas

D. Chlorella, Spirogyra

Answer:

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17. During light reaction of photosynthesis, how many photons are required for evolution of one O_2?

A. Six

B. Eight

C. Four

D. Two

Answer:

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18. One sixth part of total PGAL produced is used for synthesis of..... .

A. Glucose

B. RuBP

C. RuMP

D. DHAP

Answer:

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19. If light is cut and CO_2 supply is continued, then which of the following substance will get disappeared from photosynthesizing algal cells?

A. RuDP

B. PGAL

C. RuMP

D. PGA

Answer:

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20. Which of the following shows chloroplast dimorphism?

A. sugar best

B. sugar cane

C. potato

D. papaya

Answer:

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21. The internal source of CO_2 in CAM plant is..... .

A. OAA

B. Malic acid

C. RuBP

D. PEPA

Answer:

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22. Which pigment is absent in chloroplast?

A. Xanthophylls

B. Anthocyanin

C. Chlorophyll-b

D. Carotene

Answer:

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23. CAM plants are mostly..... .

A. tropical

B. succulents

C. monocot

D. mangroves

Answer:

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24. Which of the following is the first stable product of photosynthesis in maize?

A. PGA

B. PGAL

C. PEPA

D. OAA

Answer:

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25. Due to photorespiration, approximately.....photosynthetically fixed CO_2 is lost.

A. 0.25

B. 0.5

C. 0.6

D. 0.8

Answer:

Watch Video Solution

26. Which of the following factros is not limiting?

A. CO_2 concentration

B. light intensity

C. temperature

D. oxygen

Answer:

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27. Photosynthesis is_____reaction.

A. oxidation

B. reduction

C. redox

D. electrochemical

Answer:

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28. Which of the following is the inexhaustible source of energy for all living organisms on the earth?

A. sunlight

B. soil

C. fossil fuels

D. minerals

Answer:

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29. .....is essentially a mechanism of energy input in the living world.

A. Respiration

B. Photosynthesis

C. Transpiration

D. Photperiodism

Answer:

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30. ATP is a source of energy for..... .

A. light reaction in C_4 plants

B. photophosphorylation

C. biochemical reactions

D. photolysis of water reaction

Answer:

Watch Video Solution

31. During photosynthesis, the process which occurs first is..... .

A. pholol ysis of water

B. ionization of chlorophyll

C. synthesis of ATP

D. synthesis of $NADPH_2$

Answer:

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32. Which of the following is not a chemoautotrophs?

A. nitrosomonas

B. thiobacillus

C. ferrobacillus

D. chlorobium

Answer:

Watch Video Solution

33. Which of the following is reduced during photosynthesis?

A. CO_2

B. water

C. glucose

D. hydrogen

Answer:

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34. Chloroplast is bound by a double membrane bound structure..... .

A. peristromium

B. perichondrium

C. perineum

D. peritoneum

Answer:

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35. Grana is connected by..... .

A. intergranal lamellae

B. stroma lamellae

C. both (A) and (B)

D. thylakoid

Answer:

Watch Video Solution

36. Which of the following is not required for Hill reaction?

A. light

B. water

C. chlorophyll

D. CO_2

Answer:

Watch Video Solution

37. Stroma of Chloroplast contain enzymes required for the reduction of CO_2 into..... .

A. sucrose

B. glucose

C. fructose

D. maltose

Answer:

Watch Video Solution

38. Granum is made up of..... .

A. stroma

B. matrix

C. grana lamellae

D. thylakoids

Answer:

Watch Video Solution

39. Quantasomes contain..... molecules of pigments.

A. 150-200

B. 200-250

C. 250-280

D. 280-300

Answer:

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40. About.....thylakoids are piled one above the other like a stack of coins to form a granum.

A. 2 to 50

B. 5 to 50

C. 20 to 30

D. 10 to 100

Answer:

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41. Photosynthetic pigments are located in.....of chloroplast.

A. ribosome

B. quantasome

C. mesosome

D. outer membrane

Answer:

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42. Molecular formula for chlorophyll-a is_____.

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

B. $C_{55}H_{20}O_6N_4Mg$

C. $C_{40}H_{56}$

D. $C_{40}H_{56}O_2$

Answer:

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43. From visible spectrum of light, which component is reflected by the green leaves?

A. Blue

B. Green

C. Red

D. Orange

Answer:

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44. Chlorophyll-a and chlorophyll-b absorb.....and.....light respectively.

A. Blue and Green

B. Red and Green

C. Blue and Red

D. Red and Violet

Answer:

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45. Which of the following lights are absorbed by carotene and xyanthophylls?

A. Green

B. Blue

C. Yellow

D. Red

Answer:

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46. Energy in each protein is called..... .

A. quantasome

B. radiant

C. quantum

D. wavelength

Answer:

Watch Video Solution

47. Which of the following are found only in cyanobacteria and red algae?

A. phycobilin

B. xanthophylls

C. carotene

D. chlorophyll

Answer:

Watch Video Solution

48. The action spectrum shown the highest peak in.....region.

A. blue

B. red

C. yellow

D. green

Answer:

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49. .....is the only pigment that can absorb and convert light energy into chemical energy.

A. chlorophyll-a

B. chlorophyll-b

C. chlorophyll-c

D. chlorophyll-d

Answer:

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50. Chlorophyll-a molecule can'nt remain in ionised state for more than.....second.

A. 10^{-5}

B. 10^{-4}

C. 10^{-9}

D. 10^{-8}

Answer:

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51. Photo-oxidation of chlorophyll-a (an essential pigment) is prevented by..... .

A. Xanthophylls

B. carotenoids

C. phycobilins

D. anthocyanin

Answer:

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52. .....calcium and chloride ions play an important role in photolysis of water.

A. magnesium

B. sodium

C. manganese

D. potassium

Answer:

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53. Which of the following is not required for Hill reaction?

A. chloroplast

B. Fe salts

C. CO_2

D. sunlight

Answer:

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54. Light reactions occurs in..... .

A. stroma

B. grana

C. matrix

D. fret

Answer:

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55. In cyclic photophosphorylation, the first electron acceptor is..... .

A. Ferredoxin

B. CO

C. plastocyanin

D. cytochrome f

Answer:

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56. In non-cyclic photophosphorylation, the electrons released by Ferredoxin are accepted by..... .

A. PQ

B. plastocyanin

C. NADP

D. water

Answer:

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57. In non-cylclic photophosphorylation, the first electron acceptor is..... .

A. FRS

B. Plastoquinone

C. plastocyanin

D. cytochrome f

Answer:

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58. Dark reaction occurs in.....of chloroplast.

A. Stroma

B. Grana

C. Matrix

D. thylakoid

Answer:

Watch Video Solution

59. The reduced.....transfers the de-energised electrons to the reaction centre of PS-I.

A. Plastoquinone

B. plastocyanin

C. co-enzyme quinine

D. cytochrome

Answer:

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60. PS-I gets the de-energised electron from..... .

A. water

B. plastoquinone

C. plastocyanin

D. cytochrome-f

Answer:

Watch Video Solution

61. Due to photorespiration, approximately.....photosynthetically fixed CO_2 is lost.

A. 0.25

B. 0.5

C. 0.6

D. 0.8

Answer:

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62. In dark reaction, the first compound to accept CO_2.

A. RuMP

B. RuBP

C. PGAL

D. PGA

Answer:

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63. Which of the following is immediately used to produce sugar and then starch in C_3 pathway?

A. PGAL

B. PGA

C. OAA

D. DPGA

Answer:

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64. How many Calvin cycles are required to produce one molecule of glucose?

A. 3

B. 4

C. 5

D. 6

Answer:

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65. How many $NADPH_2$ molecules are required to produce one glucose molecule?

A. 8

B. 10

C. 12

D. 14

Answer:

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66. Which of the following is a photochemical reaction?

A. Light reaction

B. C_3 pathway

C. C_4 pathway

D. CAM pathway

Answer:

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67. C_4 plants show.

A. Kranz anatomy

B. Wreath anatomy

C. both (A) and (B)

D. Mosaic anatomy

Answer:

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68. Which of the following enzymes fix CO_2 in C_4 pathway?

A. RuBP carboxylase

B. PEP carboxylase

C. both (A) and (B)

D. PEP Kinase

Answer:

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69. Which of the following is called biochemical reaction?

A. Light reaction

B. Cyclic electron transfer

C. Photolysis of water

D. Dark phase/reaction

Answer:

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70. First CO_2 acceptor in C_4 pathway is..... .

A. pyruvic acid

B. phosphoenol pyruvic acid

C. OAA

D. Malic acid

Answer:

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71. Photolysis of water is a characteristic feature of..... .

A. Cyclic Photophosphorylation

B. C_3 pathway

C. Non-cyclic Photophosphorylation

D. C_4 pathway

Answer:

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72. NADP stands for..... .

A. Nicotinamide Adenine Diphosphonucleotide

B. Nicotinamide Adenine Dinucleotiude Phosphate

C. Nicotine Adenine Dinucleotide Phosphate

D. Both (A) and (B)

Answer:

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73. Which of the following is not a 4-C compound in C_4 pathway?

A. Erythrose

B. OAA

C. Aspartic acid

D. Malic acid

Answer:

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74. The CO_2 content in the atmosphere is

A. 1 to 3%

B. 0.03 to 0.04 %

C. 3 to 4%

D. 0.05 to 0.06 %

Answer:

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75. Diurnal fluctuation in acid concentration is the characteristic of.....plants.

A. C_3

B. C_4

C. CAM

D. C_3 and C_4

Answer:

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76. C_4 plants are more efficient than C_3 plants. Discuss.

A. Double CO_2 fixation

B. Kranz anatomy

C. Presence of OAA

D. Presence of pyruvic acid

Answer:

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77. In HSK pathway, PEPcase and RuBP are.....

.

A. hydrogen acceptor

B. CO_2 acceptor

C. enzyme involved

D. 4-C compound

Answer:

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78. In C_4 pathway, the firstCO_2 fixation occurs in..... .

A. bundle sheath cells

B. mesophyll cells

C. epidermal cells

D. cortical cells

Answer:

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79. Which of the following shows chloroplast dimorphism?

A. sugar best

B. sugarcane

C. potato

D. papaya

Answer:

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80. PEP carboxylase can fix CO_2 at.....of atmoshperic CO_2

A. 50 ppm

B. 1-2 ppm

C. 5 ppm

D. 20 ppm

Answer:

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81. In CAM plants, during night, PEP is regenerated from..... .

A. starch

B. glucose

C. malic acid

D. pyruvic acid

Answer:

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82. In CAM plants, ...concentration increases during night and decrease during day.

A. aspartic acid

B. oxaloacetic acid

C. pyruvic acid

D. malic acid

Answer:

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83. CAM plants are mostly..... .

A. Monocots

B. Tropical

C. Succulents

D. Mangroves

Answer:

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84. C_4 plants can grow in climatic conditions like high temperature, less concentration of.....and scarcity of water.

A. CO_2

B. CO_3

C. CO

D. O_2

Answer:

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85. For a pair of electrons transferred during non-cyclic path, the products formed are.

A. $1ATP, 1NADPH_2$ and $\frac{1}{2}O_2$

B. $2ATP, 1NADPH_2,$ and $\frac{1}{2}O_2$

C. $1ATP, 2NADPH_2,$ and $\frac{1}{2}O_2$

D. $1ATP, NADPH_2,$ and $1O_2$

Answer:

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86. In the glucose formed.....number of carbon atoms are contributed by the atmosphere.

A. one

B. three

C. five

D. six

Answer:

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87. C_4 plants differ from C_3 plants in.

A. CO_2 acceptor

B. place of light and dark phase

C. Leaf anatomy

D. all of these

Answer:

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88. Which of the following conversions of C_4 pathway show decarboxylation?

A. `PEP rarr OAA

B. $Malic \rightarrow PEP$

C. $Malic \rightarrow pyruvic$

D. `Malic rarr OAA

Answer:

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89. How many molecules of water would be required to release six molecules of oxygen during light reaction?

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90. Write a short note on the characteristics of photosynthetic pigments.

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91. Give a well balanced equation of photosynthesis.

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92. How are the mesophyll and bundle sheath cells connected in C_4 plants?

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93. Distinguish between PS-I and PS-II.

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94. What do you understand by Kranz anatomy?

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95. Where are chloroplasts found? What is the chemical composition of chloroplast membrane?

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96. Why is photorespiration called a wasteful process.

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97. Write a note on relation between light and dark reaction.

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98. 30 ATP and $12 NADPH_2$ are required for the formation of one molecule of glucose in the C_4 pathway'. Justify.

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99. Describe the process of non-cyclic photophosphorylation.

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100. Differentiate between cyclic and non-cyclic photophosphorylation.

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