BIOLOGY

BOOKS - EVERGREEN BIOLOGY (ENGLISH)

PHOTOSYNTHESIS

Review Questions

1. Name the following :

The source of CO_2 for aquatic plants

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2. Name the following :

The compounds that store energy in the cells.

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3. Name the following :

The "Natural purifiers" of the air.

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4. Name the following :

The category of organisms that prepare their own food from basic raw materials.

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5. Name the following :

The structure where photophosphorylation takes place.

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6. Name the following :

Damage of photosynthetic pigments at very high temperature.

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7. Name the following :

Point at which the rate of respiration and photosynthesis are equal.

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8. Which of the following releations is correct ?

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9. Name the following :

The ground substance present in a chloroplast.

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10. Name the following :

The cell organelle responsible for photosynthesis.

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11. Name the following :

That part of the chloroplast where the light reaction of photosynthesis takes place.

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12. Name the following :

The process of conversion of ADP into ATP during photosynthesis.

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13. Name the following :

The structure where photophosphorylation takes place.

Watch Video Solution

14. Name the following :

The part of the chloroplast where the dark reaction of photosynthesis takes place.

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15. Name the following :

Plants that prepare their own food from basic raw materials.

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16. Name the following :

The process of conversion of ADP to ATP during the first phase of photosynthesis.

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17. Name the following :

Screen used to prove that light is necessary for photosynthesis

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18. Name the following :

Process used to remove starch from the leaves.

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19. Name the following :

Various sources of carbon.

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20. State whether the following statements are true or false. Rewrite the false statements in their correct form

All green plants are categorized as consumers.

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21. State whether the following statements are true or false. Rewrite the false statements in their correct form

The immediate product of photosynthesis is glucose.

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22. State whether the following statements are true or false. Rewrite the false statements in their correct form

The dark reaction of photosynthesis occurs during night time.

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23. State whether the following statements are true or false. Rewrite the false statements in their correct form

Plants pay the price of photosynthesis in the form of respiration.

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24. State whether the following statements are true or false. Rewrite the false statements in their correct form

The oxygen produced during photosynthesis comes from CO_2.

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25. State whether the following statements are true or false. Rewrite the false statements in their correct form

Plants that manufacture their own food are termed heterotrophs.

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26. State whether the following statements are true or false. Rewrite the false statements in their correct form

Photosynthesis occurs in all the cells of the plant.

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27. State whether the following statements are true or false. Rewrite the false statements in their correct form

Photolysis is the process of splitting of water

molecules in the presence of grana and temperature.

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28. State whether the following statements are true or false. Rewrite the false statements in their correct form

Stomata is stimulated by light.

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29. State whether the following statements are true or false. Rewrite the false statements in their correct form

Grana helps in diffusion of gases.

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30. State whether the following statements are true or false. Rewrite the false statements in their correct form

Photosynthesis results in the loss of dry weight of the plant

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31. State whether the following statements are true or false. Rewrite the false statements in their correct form

The unit of light absorbed by the chlorophyll during photosynthesis is the proton.

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32. State whether the following statements are true or false. Rewrite the false statements in their correct form

Photosynthesis stops to occur at a temperature above 35°C

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33. Fill in the blanks in the following equation

$$\ldots\ldots + 12H_2O \xrightarrow[\text{Chiorophyll}]{\text{light energy}} C_6H_{12}O_6 + \ldots\ldots + \ldots\ldots$$

name the process represented by the above equation

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34. Fill in the blanks in the following equation

$$\ldots\ldots + 12H_2O \xrightarrow[\text{Chiorophyll}]{\text{light energy}} C_6H_{12}O_6 + \ldots\ldots + \ldots.$$

define the process

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35. Fill in the blanks in the following equation

$$\ldots\ldots + 12H_2O \xrightarrow[\text{Chiorophyll}]{\text{light energy}} C_6H_{12}O_6 + \ldots\ldots + \ldots.$$

mention any two significance of the process.

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36. Complete the following sentences

_____ is an important mineral constituent of chlorophyll.

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37. Complete the following sentences

The photolysis of water and fixation of CO_2 takes place in _____ and _____ of respectively.

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38. Complete the following sentences

In photosynthesis radiant energy is converted into _____

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39. Complete the following sentences

O_2 released during photosynthesis is produced from _____

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40. Complete the following sentences

Reducing power in photosynthesis is _____.

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41. Complete the following sentences

In photosynthesis is _____ oxidized and is reduced.

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42. Which one of these reactions occurs during photosynthesis

A. Carbon dioxide is reduced and water is oxidised ?

B. Water is reduced and carbon dioxide is oxidised?

C. Both the carbon dioxide and water are oxidised?

D. Both the carbon dioxide and water are reduced ?

Answer:

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43. Whal the source of O_2 produced during photosynthesis ?

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44. What is the role of light in photosynthesis?

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45. Comment upon the following

O_2 produced during photosynthesis comes from water.

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46. Comment upon the following

All flesh is grass.

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47. Give reason for the following

Photosynthesis is considered as a procoss supporting all life on earth.

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48. Define the following

Photosynthesis

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49. Define the following

Solarization

 Watch Video Solution

50. Define the following

Optimum temperature

Watch Video Solution

51. Define the following

Q_{10} Law

Watch Video Solution

52. Define the following

Quantasome

Watch Video Solution

53. Define the following

Grana

Watch Video Solution

54. Define the following

Photophosphorylation.

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55. Differentiate between the following pairs as directed in the brackets

Light and Dark phase (Occurs in)

Watch Video Solution

56. Differentiate between the following pairs as directed in the brackets

Chlorophyll and Chloroplast. [Location)

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57. Differentiate between the following pairs as directed in the brackets

Autotrophs and Heterotrophs. (Example)

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58. Differentiate between the following pairs as directed in the brackets

Photoautotrophs and Chemoautotroph (Example)

Watch Video Solution

59. Differentiate between the following pairs as directed in the brackets

Stoma and stroma (structure)

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60. Discuss briefly

Light reaction

61. Discuss briefly

Dark reaction

62. Discuss briefly

Destarched plant

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63. Explain Photolysis

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64. Draw a neat and labelled diagram of the chloroplast.

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65. List the events taking place in the photochemical phase of photosynthesis

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66. if you are planning an experiment to show the effect of light on photosynthesis

Will you select white light or green light? Justify your answer

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67. if you are planning an experiment to show the effect of light on photosynthesis

Why would you select a destarched plant

Watch Video Solution

68. Give reason for the following

Green leaves are thin and broad.

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69. Give reason for the following

Photosynthesis is considered as a procoss supporting all life on earth.

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70. Give reason for the following

All the food chains begin with green plants.

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71. Give reason for the following

Animals owe their existence to chlorophyll.

Watch Video Solution

72. Give reason for the following

Sleeping under a tree at night is not advisable

Watch Video Solution

73. Give reason for the following

All life on Earth is supported by Photosynthesis.

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74. Give exact location and function of

Stoma

Watch Video Solution

75. Give exact location and function of

Thylakoids

Watch Video Solution

76. Give exact location and function of

Guard cell

Watch Video Solution

77. Give exact location and function of

Grana

Watch Video Solution

78. Give exact location and function of

Chloroplast

Watch Video Solution

79. Give exact location and function of Thylakoids

Watch Video Solution

80. Enumerate the steps involved in testing a green leaf for the presence of starch.

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81. Rewrite the correct form of statement by inserting suitable word/words at right place. Do not delete any word in the statement

Destarching a plant means removing the starch from the plant.

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82. Rewrite the correct form of statement by inserting suitable word/words at right place. Do not delete any word in the statement

The splitting of water molecules into hydrogen and hydroxyl ions is termed photolysis.

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83. Write the full form of NADP and ATP.

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84. Write in correct logical sequence without changing the first term

Destarched plant, iodine added, washed in water, a leat boiled in alcohol, placed in sunlight. (Testing for presence of starch).

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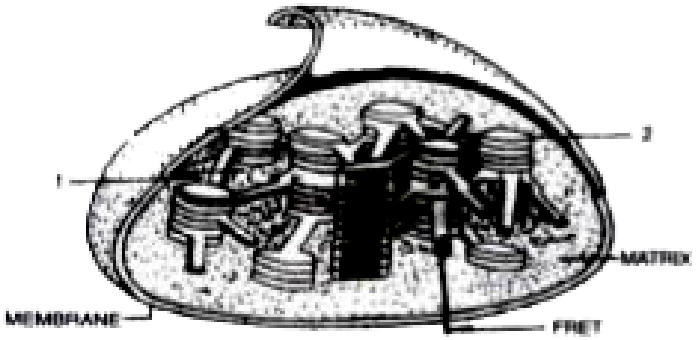
85. Rewrite by inserting a key word in the space indicated by '^'. Photolysis is the splitting of water molecules into hydrogen ions and hydroxyl ions in the presence of and light

Watch Video Solution

86. Given below is a diagrammatic representation of the internal structure of an organelle found in a plant cell. Study the same and then answer the questions that follow:



Identify the organelle.

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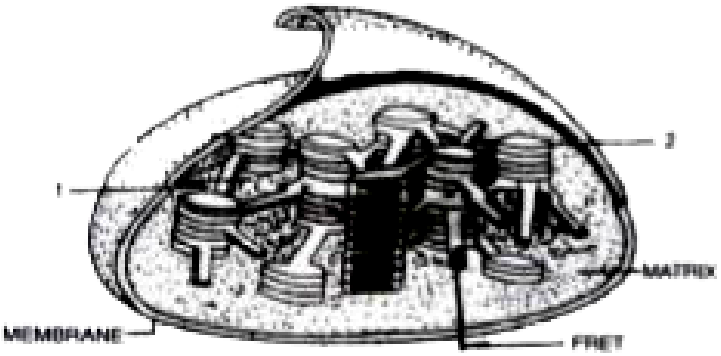
87. Given below is a diagrammatic representation of the internal structure of an organelle found in a plant cell. Study the same and then answer the questions that follow:



Name the physiological process occurring in this organelle.

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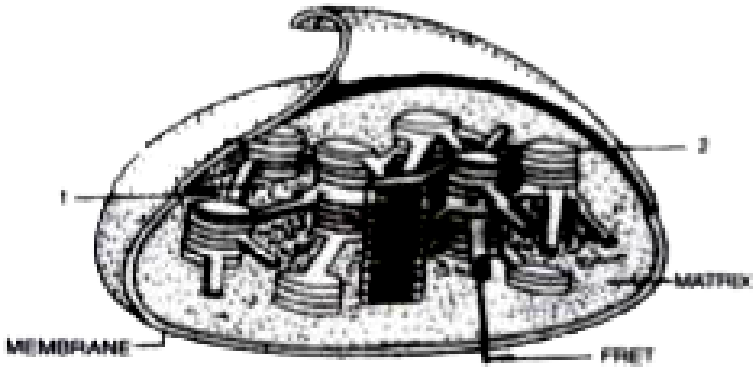
88. Given below is a diagrammatic representation of the internal structure of an organelle found in a plant cell. Study the same and then answer the questions that follow:



Mention one way in which this process is beneficial to man

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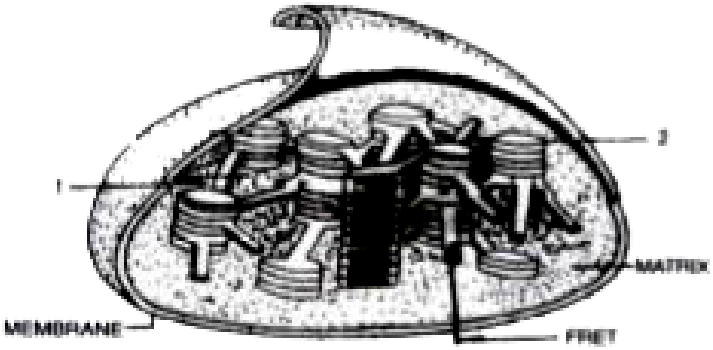
89. Given below is a diagrammatic representation of the internal structure of an organelle found in a plant cell. Study the same and then answer the questions that follow:



Name the phase of this process occurring in part labelled 1 and 2

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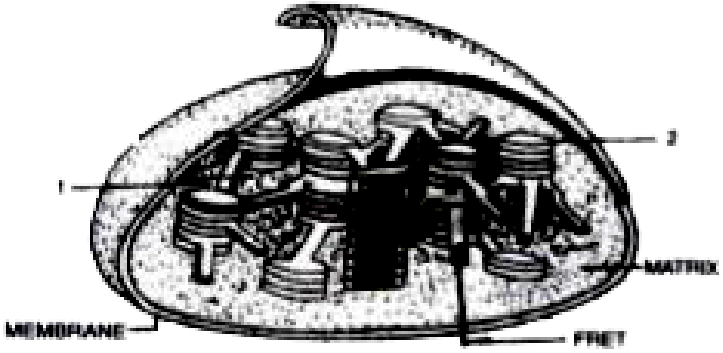
90. Given below is a diagrammatic representation of the internal structure of an organelle found in a plant cell. Study the same and then answer the questions that follow:



A chemical substance NADP plays an active part in one of the phases. Give the expanded form of NADP and state its role in the above process

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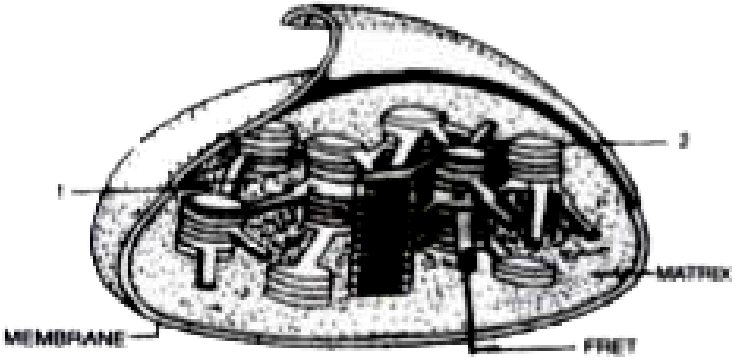
91. Given below is a diagrammatic representation of the internal structure of an organelle found in a plant cell. Study the same and then answer the questions that follow:



Represent the physiological process which is beneficial to man in the form of a chemical equation.

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92. A candidate in order to study the importance of certain factors in photosynthesis took a potted plant and kept it in the dark for over 24 hours. Then in the early hours of the morning she covered one of the leaves with black paper in the centre only. She placed the potted plant in the sunlight for a few hours, and then tested the leaf which was covered with black paper for starch.

What aspect of photosynthesis was being investigated ?

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93. A candidate in order to study the importance of certain factors in photosynthesis took a potted plant and kept it in the dark for over 24 hours. Then in the early hours of the morning she covered one of the leaves with black paper in the centre only. She placed the potted plant in the sunlight for a

few hours, and then tested the leaf which was covered with black paper for starch.

Is there any control in this experiment ? If so state the same.

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94. A candidate in order to study the importance of certain factors in photosynthesis took a potted plant and kept it in the dark for over 24 hours. Then in the early hours of the morning she covered one of the

leaves with black paper in the centre only. She placed the potted plant in the sunlight for a few hours, and then tested the leaf which was covered with black paper for starch.

What aspect of photosynthesis was being investigated ?

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95. A candidate in order to study the importance of certain factors in photosynthesis took a potted plant and kept it

in the dark for over 24 hours. Then in the early hours of the morning she covered one of the leaves with black paper in the centre only. She placed the potted plant in the sunlight for a few hours, and then tested the leaf which was covered with black paper for starch

Describe step by step how the candidate proceeded to test the leaf for the presence of starch

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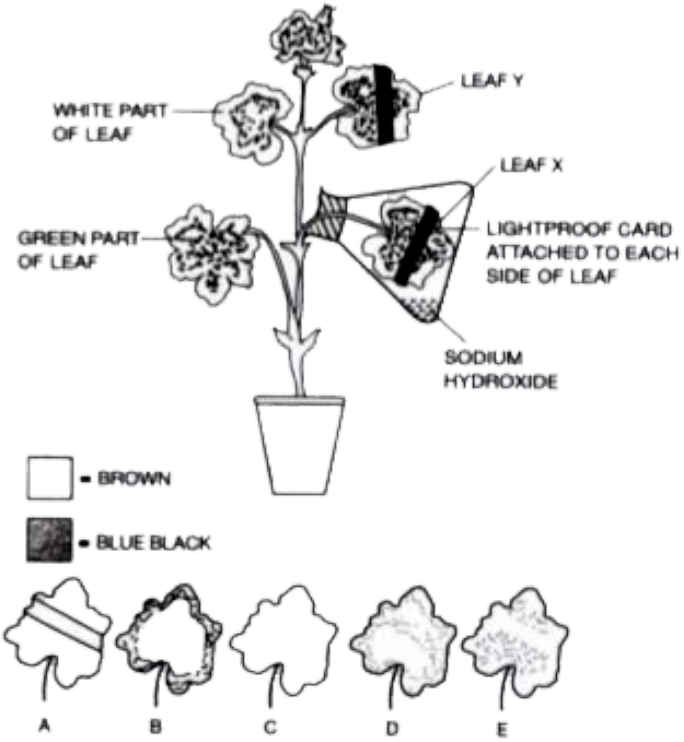
96. A well-watered healthy potted plant with variegated leaves was kept in darkness for about 24 hours. It was then set-up as shown in the diagram below and exposed to light for about 12 hours. At the end of this time, leaf X and leal y were tested for starch. Study the diagram and answer the questions that follow



Why was the plant initially kept in darkness for 24 hours ?

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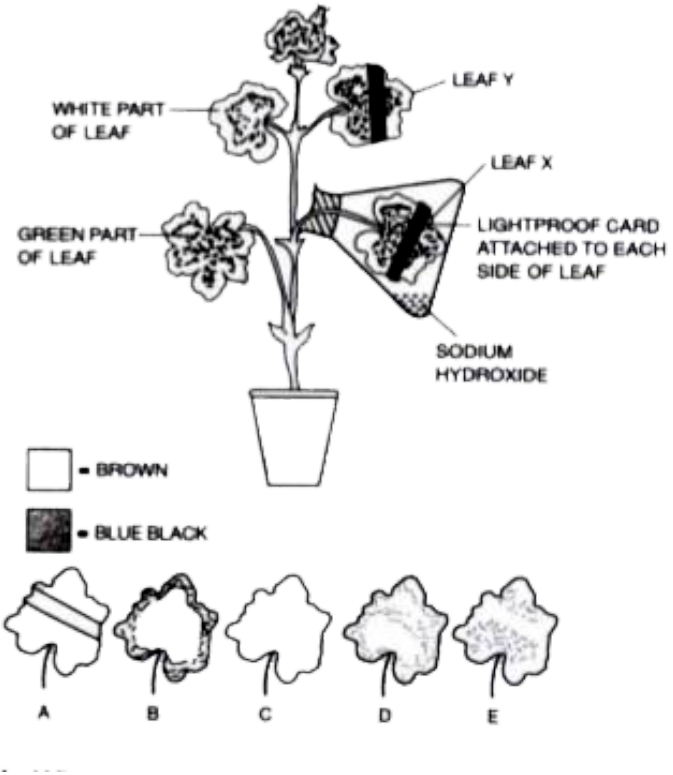
97. A well-watered healthy potted plant with variegated leaves was kept in darkness for about 24 hours. It was then set-up as shown in the diagram below and exposed to light for about 12 hours. At the end of this time, leaf X and leal y were tested for starch. Study the diagram and answer the questions that follow



What is the function of sodium hydroxide solution in the fiask?

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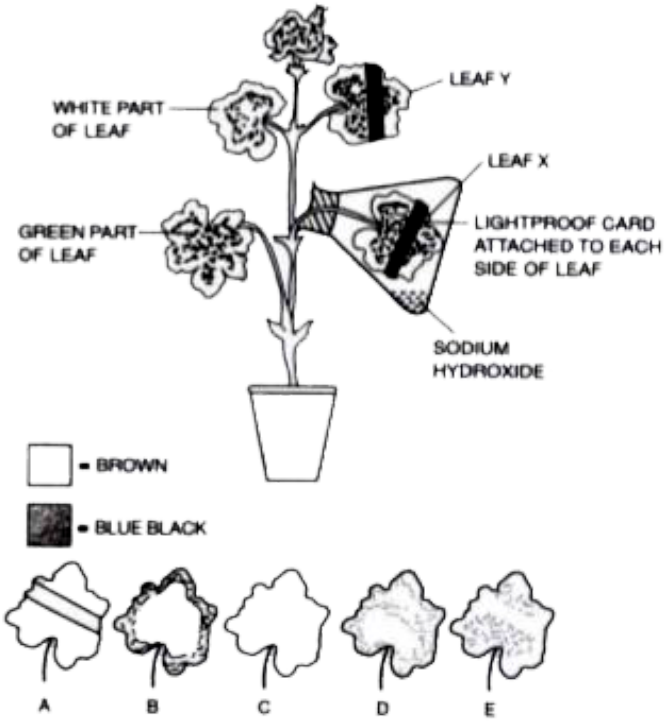
98. A well-watered healthy potted plant with variegated leaves was kept in darkness for about 24 hours. It was then set-up as shown in the diagram below and exposed to light for about 12 hours. At the end of this time, leaf X and leal y were tested for starch. Study the diagram and answer the questions that follow



Select the correct leaf from the five available choices shown in the diagram as A, B, C, D and E Rewrite the correct answer by filling in the appropriate letter for the questions that follow :

After the starch test, leaf X would look like .....

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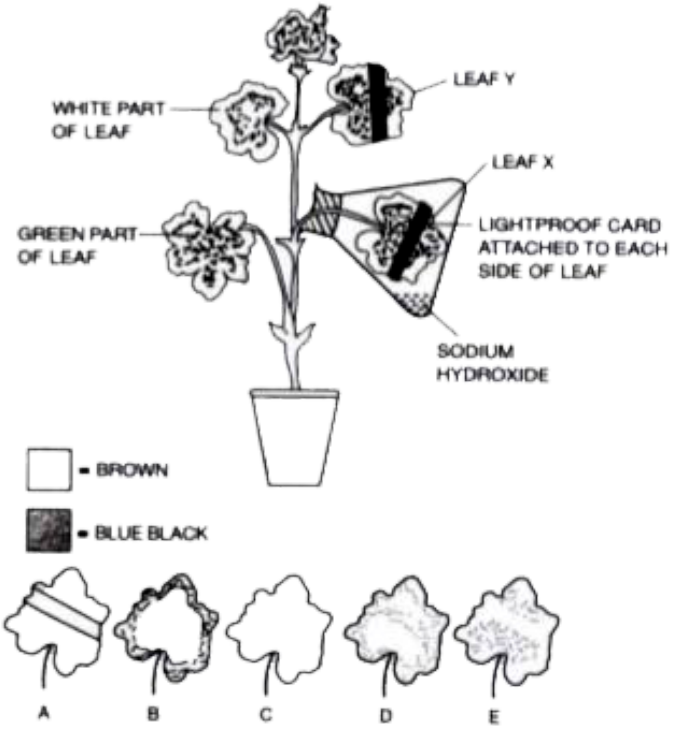
99. A well-watered healthy potted plant with variegated leaves was kept in darkness for about 24 hours. It was then set-up as shown in the diagram below and exposed to light for about 12 hours. At the end of this time, leaf X and leal y were tested for starch. Study the diagram and answer the questions that follow



Select the correct leaf from the five available choices shown in the diagram as A, B, C, D and E Rewrite the correct answer by filling in the appropriate letter for the questions that follow :

After the starch test, leat Y would look like .....

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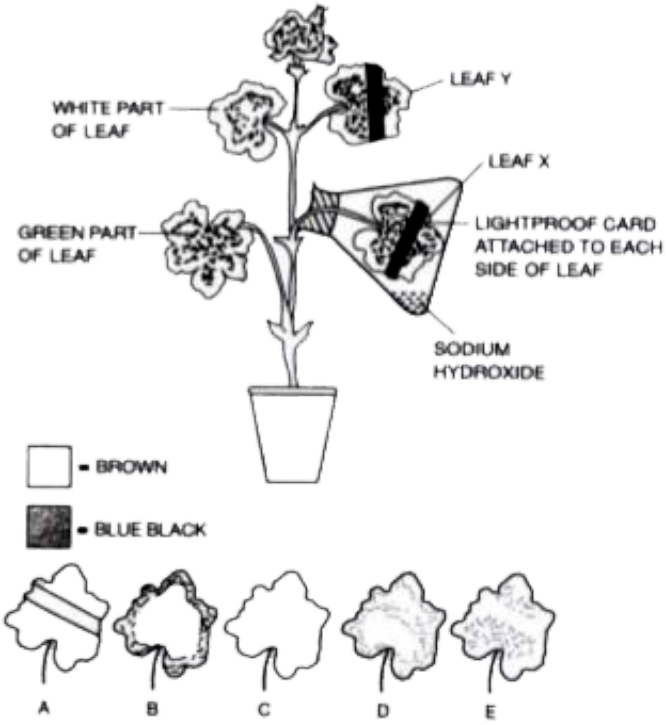
100. A well-watered healthy potted plant with variegated leaves was kept in darkness for about 24 hours. It was then set-up as shown in the diagram below and exposed to light for about 12 hours. At the end of this time, leaf X and leal y were tested for starch. Study the diagram and answer the questions that follow



The experiment with leaf Y shows that photosynthesis requires the presence of certain factors. Mention any one factor.

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101. A healthy Croton plant bearing variegated leaves was kept in a dark cupboard to destarch it after which it was placed in sunlight for a few hours. One of the leaves was then plucked and an outline of the leaf marking the green and the non-green regions was drawn. The leaf was then tested for starch. Using the above information, answer the following questions

State the aim of the above experiment.

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102. A healthy Croton plant bearing variegated leaves was kept in a dark cupboard to destarch it after which it was placed in sunlight for a few hours. One of the leaves was then plucked and an outline of the leaf marking the green and the non-green regions was drawn. The leaf was then tested for starch. Using the above information, answer the following questions

Name the chemical used for testing the presence of starch.

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103. A healthy Croton plant bearing variegated leaves was kept in a dark cupboard to destarch it after which it was placed in sunlight for a few hours. One of the leaves was then plucked and an outline of the leaf marking the green and the non-green regions was drawn. The leaf was then tested for starch. Using the above information, answer the following questions

Why is the leaf boiled in water and alcohol before testing for the presence of starch?

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104. A healthy Croton plant bearing variegated leaves was kept in a dark cupboard to destarch it after which it was placed in sunlight for a few hours. One of the leaves was then plucked and an outline of the leaf marking the green and the non-green regions was drawn. The leaf was then tested for starch. Using the above information, answer the following questions

What change is seen in the leaf after the starch test

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105. A healthy Croton plant bearing variegated leaves was kept in a dark cupboard to destarch it after which it was placed in sunlight for a few hours. One of the leaves was then plucked and an outline of the leaf marking the green and the non-green regions was drawn. The leaf was then tested for starch. Using the above information, answer the following questions

Give the chemical equation to represent the process of starch formation in plants.

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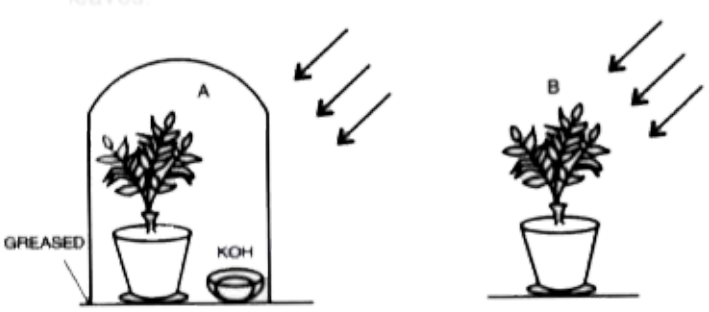
106. Two healthy green plants were placed in the dark for 24 hours. They were then set-up as shown in the figure and left for 4 hours. Then a leaf was taken from each plant and the chlorophyll was removed from the leaves



How is the chlorophyll removed ?

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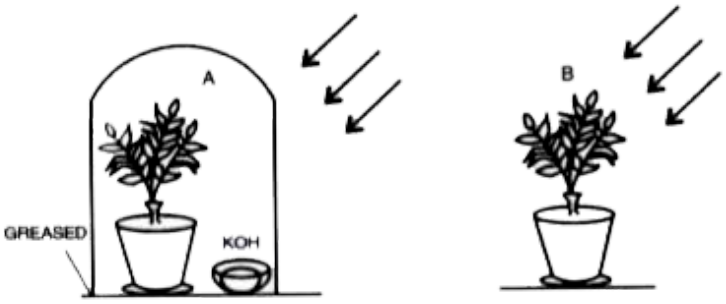
107. Two healthy green plants were placed in the dark for 24 hours. They were then set-up as shown in the figure and left for 4 hours. Then a leaf was taken from each plant and the chlorophyll was removed from the leaves



What hypothesis is being tested in this experiment?

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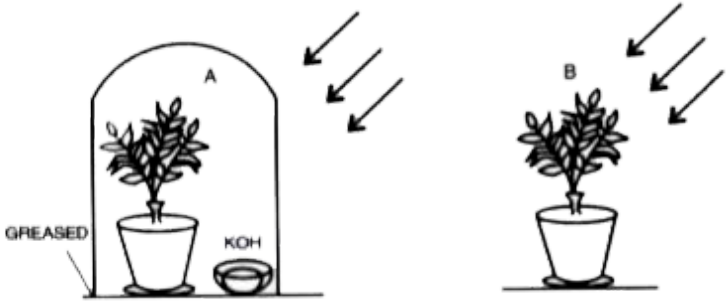
108. Two healthy green plants were placed in the dark for 24 hours. They were then set-up as shown in the figure and left for 4 hours. Then a leaf was taken from each plant and the chlorophyll was removed from the leaves



What would be the result of the final step?

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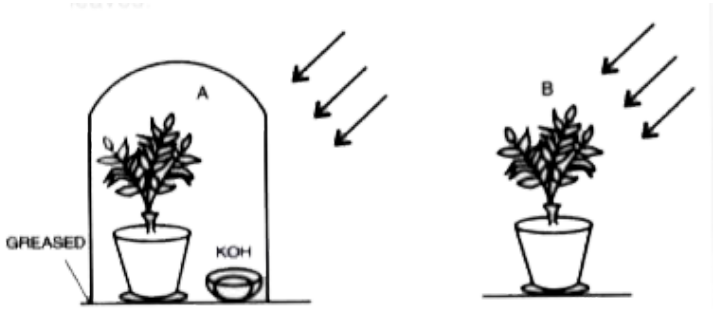
109. Two healthy green plants were placed in the dark for 24 hours. They were then set-up as shown in the figure and left for 4 hours. Then a leaf was taken from each plant and the chlorophyll was removed from the leaves



Why is it necessary to grease the glass sheet?

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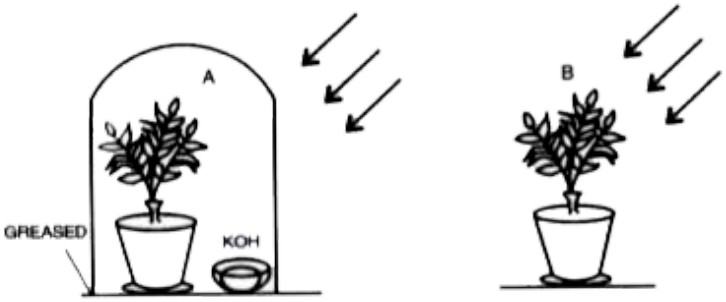
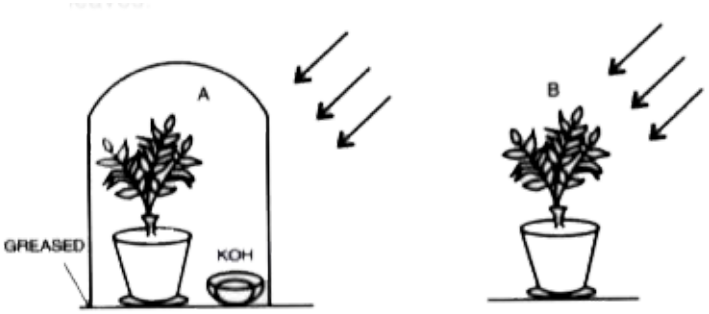
110. Two healthy green plants were placed in the dark for 24 hours. They were then set-up as shown in the figure and left for 4 hours. Then a leaf was taken from each plant and the chlorophyll was removed from the leaves



What hypothesis is being tested in this experiment?

Watch Video Solution

111. Two healthy green plants were placed in the dark for 24 hours. They were then set-up as shown in the figure and left for 4 hours. Then a leaf was taken from each plant and the chlorophyll was removed from the leaves



How is the chlorophyll removed ?

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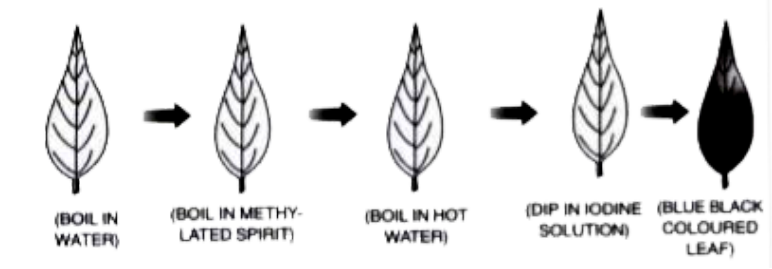
112. The diagram below illustrates iodine test for the presence of starch in a leaf



Why is the leaf boiled in water for few minutes ?

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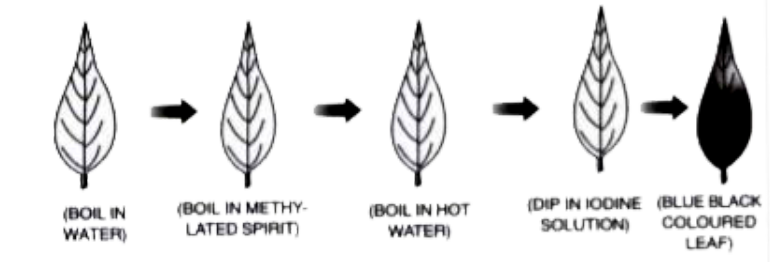
113. The diagram below illustrates iodine test for the presence of starch in a leaf



Why will the colour of leaf after boiling it with methylated spirit turns pale white ?

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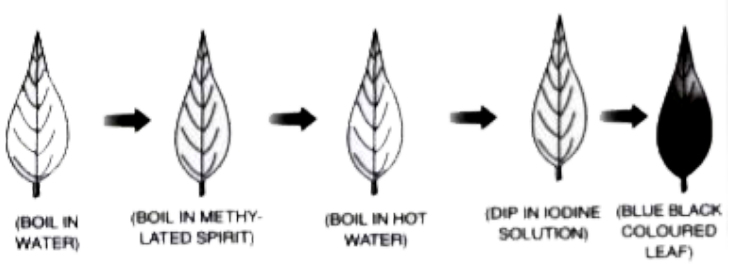
114. The diagram below illustrates iodine test for the presence of starch in a leaf



Why is the leaf again boiled in hot water?

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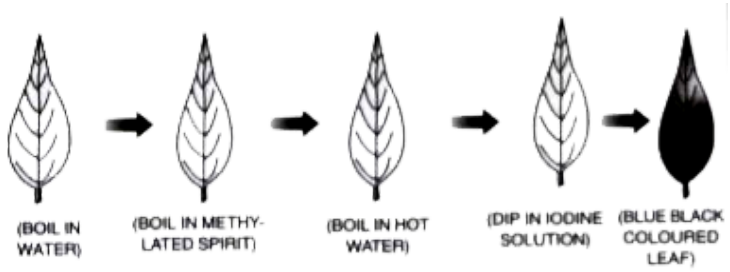
115. The diagram below illustrates iodine test for the presence of starch in a leaf



What is the composition of Iodine solution in 100 mL of water?

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116. Make a diagrammatic representation of cabon cyle

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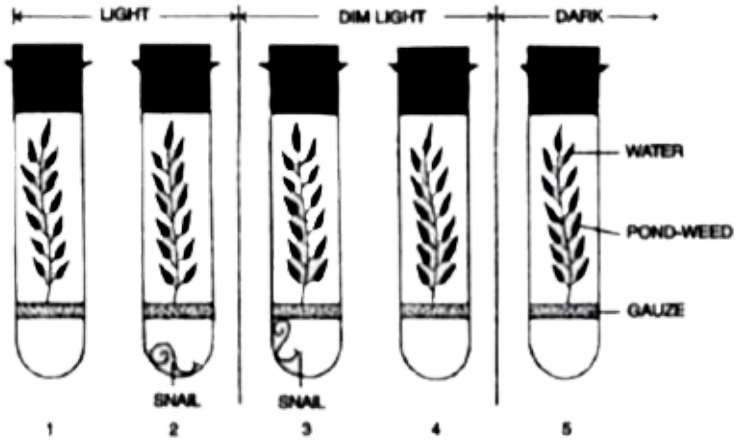
117. The diagram given below is a set up to demonstrate an experiment



Pond-weed was placed in five water-filled tubes. The experiment was set-up as shown in the diagram. The tubes were then left for 24 hours

In which tube would you expect the greatest increase in dry weight to the pond-weed

A. 1

B. 2

C. 3

D. 4

Answer:

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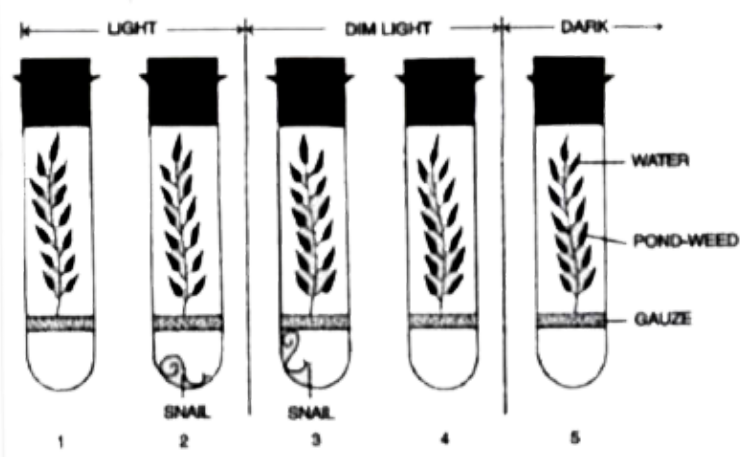
118. The diagram given below is a set up to demonstrate an experiment



Pond-weed was placed in five water-filled tubes. The experiment was set-up as shown in the diagram. The tubes were then left for 24 hours

In which tube would you expect to find the plant with the least amount of starch?

A. 1

B. 2

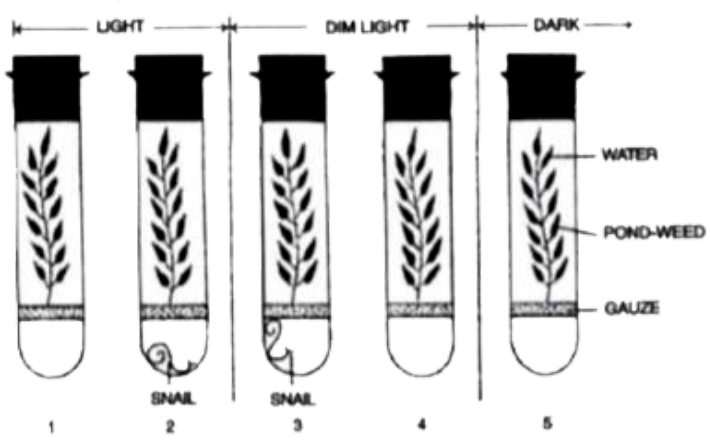
C. 3

D. 4

Answer:

Watch Video Solution

119. The diagram given below is a set up to demonstrate an experiment



Pond-weed was placed in five water-filled tubes. The experiment was set-up as shown in the diagram. The tubes were then left for 24 hours

The tube in which most oxygen would be found is

A. 1

B. 2

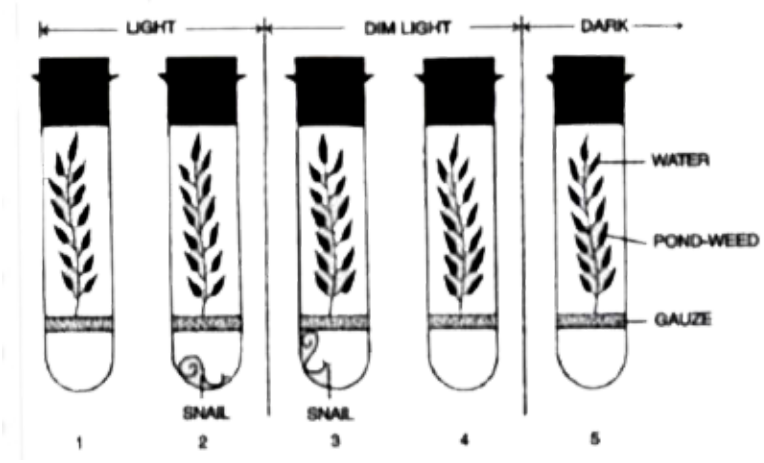
C. 3

D. 4

Answer:

Watch Video Solution

120. The diagram given below is a set up to demonstrate an experiment



Pond-weed was placed in five water-filled tubes. The experiment was set-up as shown in the diagram. The tubes were then left for 24 hours

The tube in which least carbon dioxide would be found is

A. 1

B. 2

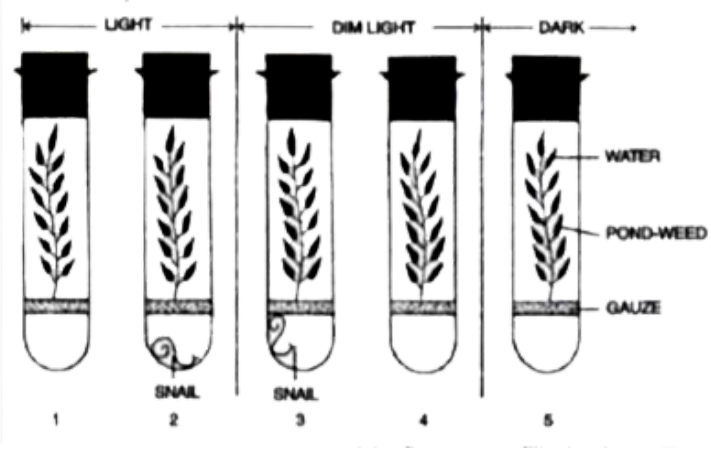
C. 3

D. 4

Answer:

Watch Video Solution

121. The diagram given below is a set up to demonstrate an experiment



Pond-weed was placed in five water-filled tubes. The experiment was set-up as shown in the diagram. The tubes were then left for 24 hours

The tube in which the plant would survive for the shortest length of time is

A. 1

B. 2

C. 3

D. 4

Answer:

 Watch Video Solution

122. Complete the following by filling in the blanks numbered 1 to 10 with the appropriate word/term Photosynthesis involves light reaction and dark reaction. During light reaction, the chlorophyll present in the

(1)..... gets activated by absorbing light energy This energy splits (2).....molecules to....(3).....and oxygen and releases two electrons. This process is called (4).... The (5).....ions are picked up by NADP to form (6).....The ADP is converted to (7)....This process is called (8).....During the dark phase, the compound produced at the end of light reaction reacts with carbon dioxide to form (9).....This product is converted to starch. The process is called (10) .....

Watch Video Solution

123. Copy and complete the following by filling in the blanks 1 to 5 with appropriate words/terms/ phrases:

To test the leaf for starch, the leaf is boiled in water.....(1) It is next boiled in methylated spirit to.....(2)The leaf is placed in warm water to soften it. It is then placed in a dish and ..... (3) solution is added. The region, which contains starch, turns...(4)and the region, which does not contain starch, turns ..... (5)

Watch Video Solution

124. Mention any three adaptations found in plants to favour the process of photosynthesis.

Watch Video Solution

125. The diagram below represents an experiment conducted to prove the importance of a factor in photosynthesis

Study the same and then answer the questions that follow

Name the factor being studied in this expenment

Watch Video Solution

126. The diagram below represents an experiment conducted to prove the importance of a factor in photosynthesis

Study the same and then answer the questions that follow

Why was the plant kept in a dark room before conducting the experiment

Watch Video Solution

127. The diagram below represents an experiment conducted to prove the importance of a factor in photosynthesis

Study the same and then answer the questions that follow

Why was the experimental leaf kept in (1) boiling water (2) methylated spint?

Watch Video Solution

128. The diagram below represents an experiment conducted to prove the importance of a factor in photosynthesis

Study the same and then answer the questions that follow

Name the solution used to test the presence of Starch in the eat

Watch Video Solution

129. The diagram below represents an experiment conducted to prove the importance of a factor in photosynthesis

Study the same and then answer the questions that follow

What we observe in the experimental leat at the end of the starch test

Watch Video Solution

130. The diagram below represents an experiment conducted to prove the importance of a factor in photosynthesis

Study the same and then answer the questions that follow

Give a balanced chemical equation to representa procesa photosynthesis

Watch Video Solution

131. Rewrite in correct logical sequence

Rewrite in correct logical sequence oxidation of glucose, 2 ATP

Watch Video Solution

132. Rewrite in correct logical sequence

Caterpillar, Snake, Owl, Frog, Green leaves.

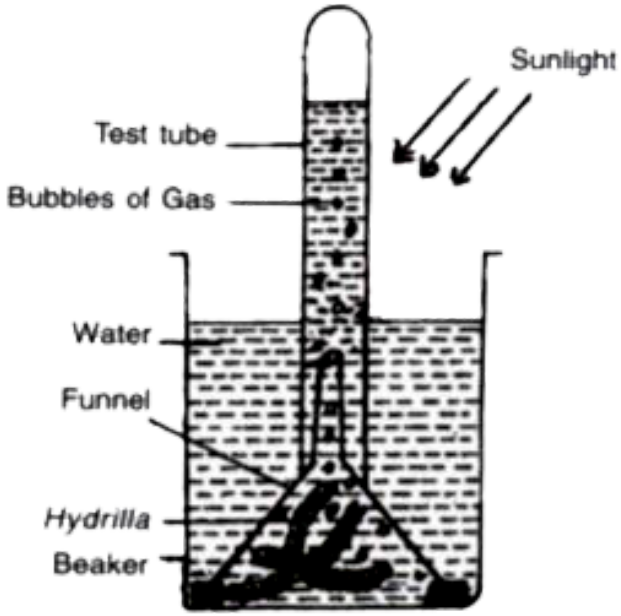
Watch Video Solution

133. Match the items in coulmn I with those in coulmn II

Column-I	Column-II
(*i*) Light reaction	(*a*) Plants
(*ii*) Dark reaction	(*b*) Chlorophyll
(*iii*) Autotrophs	(*c*) Stroma
(*iv*) Quantasome	(*d*) Thylakoids

Watch Video Solution

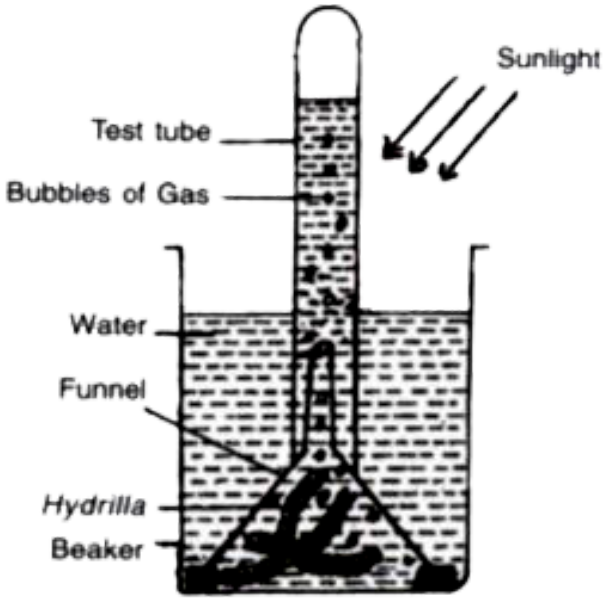
134. The figure below represents an experiment set-up to study a physiological process in plants



Name the physiological process being studied

Watch Video Solution

135. The figure below represents an experiment set-up to study a physiological process in plants



Explain the process,

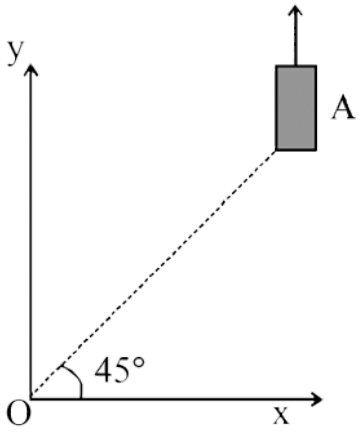
Watch Video Solution

136. On a frictionless horizontal surface , assumed to be the $x-y$ plane , a small trolley A is moving along a straight line parallel to the $y-$ axis (see figure) with a constant velocity of $\left(\sqrt{3}-1\right) m / s$. At a particular instant , when the line OA makes an angle of $45(\circ)$ with the $x-$ axis , a ball is thrown along the surface from the origin O. Its velocity makes an angle ϕ with the $x-$ axis and it hits the trolley .

(a) The motion of the ball is observed from the frame of the trolley . Calculate the angle θ

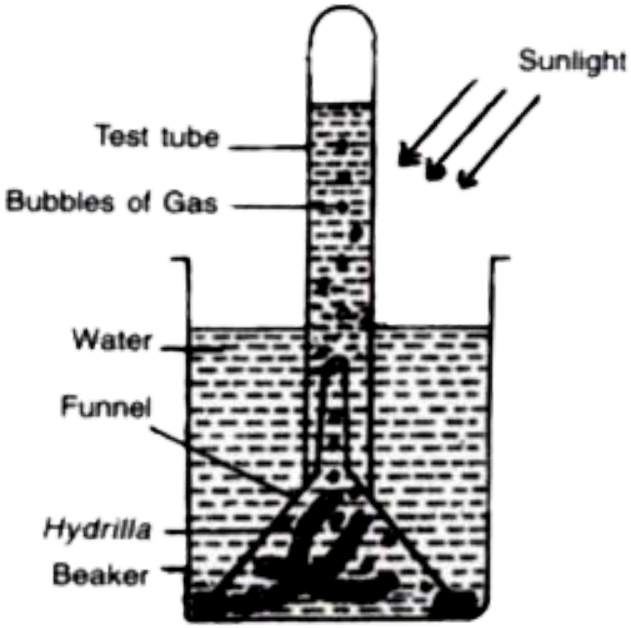
made by the velocity vector of the ball with the $x-$ axis in this frame .

(b) Find the speed of the ball with respect to the surface , if $\phi=(4\theta)/(3)$.



Watch Video Solution

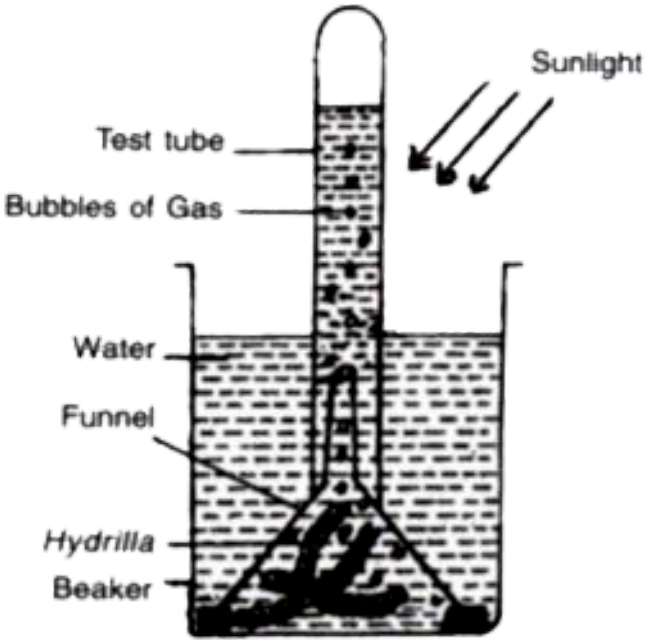
137. The figure below represents an experiment set-up to study a physiological process in plants



Give a well balanced equation to represent the process

Watch Video Solution

138. The figure below represents an experiment set-up to study a physiological process in plants



What would happen to the rate of bubbling of the as it a pinch of sodium bicarbonato is

added to the water in the beaker ? Explain your answer

Watch Video Solution

139. Choose the correct answer from the given four options :

A plant is kept in a dark cupboard for about 48 hours before conducting any experiment on photosynthesis to

A. Remove starch from the plant

B. Ensure that starch is not translocated from the leaves

C. Remove chlorophyll from the leaf of the plant.

D. Remove starch from the experimental leaf.

Answer:

140. Choose the correct answer from the given four options :

NADP is expanded as

A. Nicotinamide, adenosine dinucleotide phosphate

B. Nicotinamide, adenine dinucleotide phosphate

C. Nicotinamide, adenine dinucleous phosphate

D. Nicotinamide, adenosine dinucleous phosphate.

Answer:

Watch Video Solution

141. Choose the correct answer from the given four options :

The individual fatened stacks of membranous structures inside the chloroplasts are known as

A. Grana

B. Stroma

C. Thylakoids

D. Crista

Answer:

Watch Video Solution

142. Choose the correct answer from the given four options :

A destarched plant is one whose

A. Leaves are free from chlorophyll

B. Aerial parts are free from starch

C. Leaves are free from starch

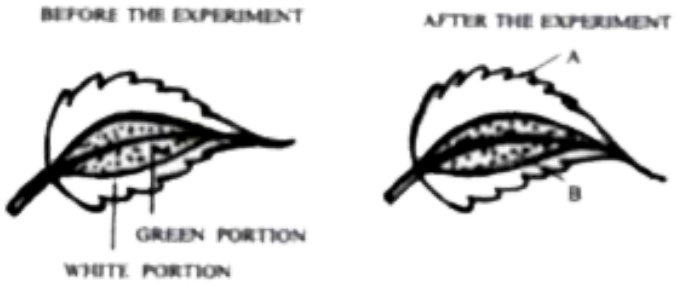
D. Plant is free from starch

Answer:

Watch Video Solution

143. The diagram given below is an experiment conducted to study a factor necessary for photosynthesis Observe the diagram and then

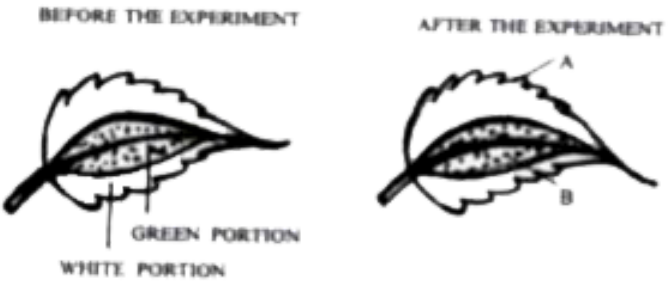
answer the following questions



What is the aim of the experiment

Watch Video Solution

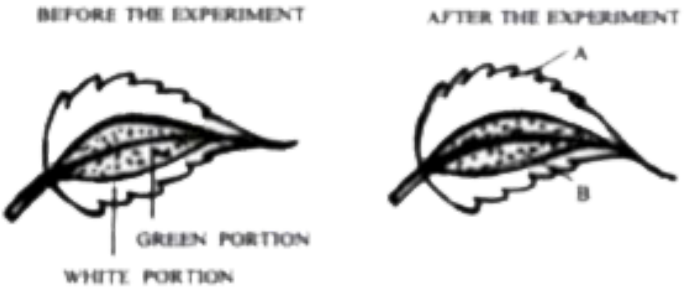
144. The diagram given below is an experiment conducted to study a factor necessary for photosynthesis Observe the diagram and then answer the following questions



Name the test performed on the leaf and the solution used for the test

Watch Video Solution

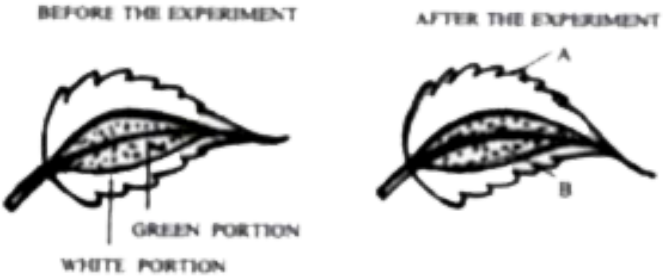
145. The diagram given below is an experiment conducted to study a factor necessary for photosynthesis Observe the diagram and then answer the following questions



What type of leaf was used for the experiment? Give an example

Watch Video Solution

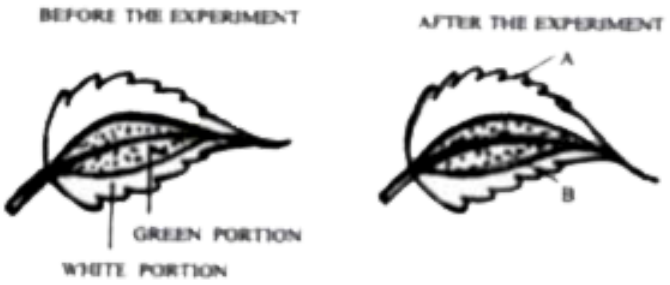
146. The diagram given below is an experiment conducted to study a factor necessary for photosynthesis Observe the diagram and then answer the following questions



What is the expected result of the above test on the parts labelled A and B ?

Watch Video Solution

147. The diagram given below is an experiment conducted to study a factor necessary for photosynthesis Observe the diagram and then answer the following questions



Give a balanced chemical equation to represent the process of photosynthesis

Watch Video Solution

148. Give the biological / lochnical tem for the following The biological process which is the starting point of the food chain

Watch Video Solution

149. Differentiate between the following pair on the basis of what is mentioned within bracket

photolysis and photophosphorylation (definition)

Watch Video Solution

150. Differentiate between the following pair on the basis of what is mentioned within

bracket

NADP and ATP (Expand the abbreviation)

Watch Video Solution

151. Differentiate between the following pair on the basis of what is mentioned within bracket

ATP and AIDS (expand the abbrevaitions)

Watch Video Solution

152. Differentiate between the following pair on the basis of what is mentioned within bracket

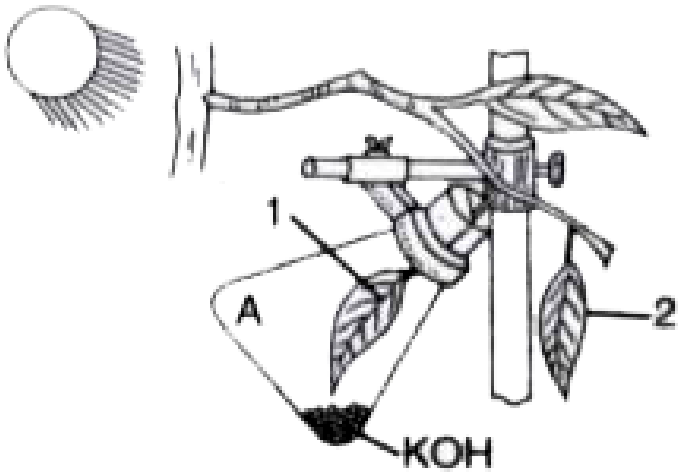
leaf and liver (from In which glucose is stored)

Watch Video Solution

153. Expand NAD in biological abbreviation

Watch Video Solution

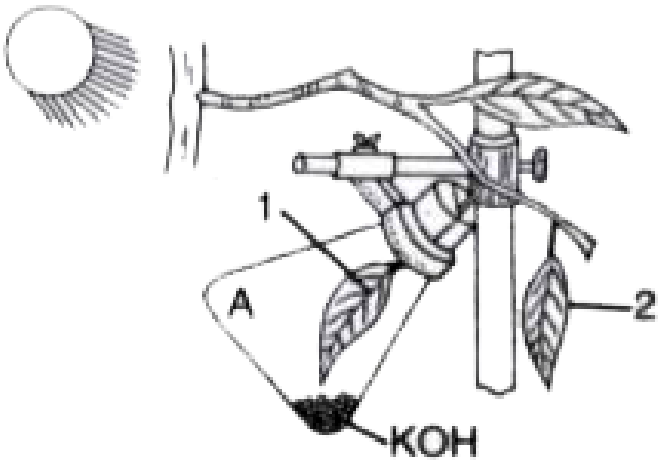
154. The figure given below represents an experiment to demonstrate a particular aspect of photosynthesis. The alphabet "A" represents a certain condition inside the flask



What is the aim of the experiment

Watch Video Solution

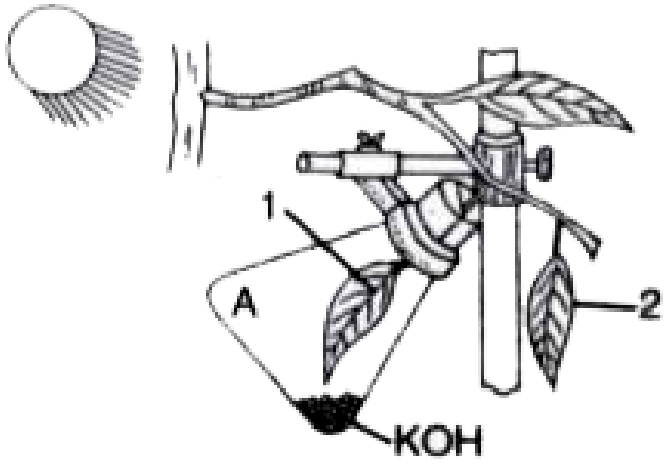
155. The figure given below represents an experiment to demonstrate a particular aspect of photosynthesis. The alphabet "A" represents a certain condition inside the flask



Identity ene special condition inside the flask

Watch Video Solution

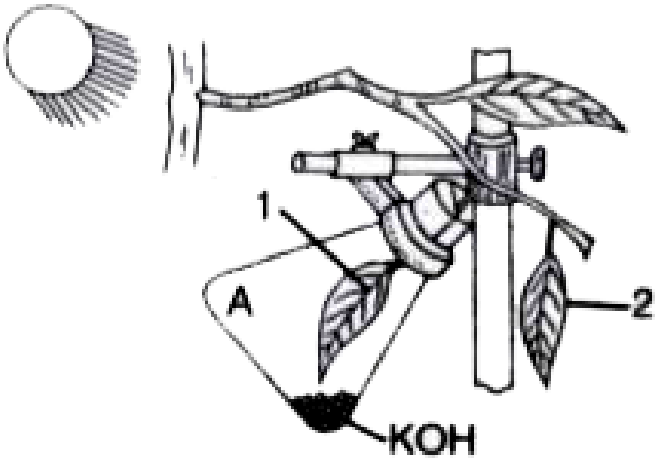
156. The figure given below represents an experiment to demonstrate a particular aspect of photosynthesis. The alphabet "A" represents a certain condition inside the flask



Name an a alternative chemical which can be use instead KOH

Watch Video Solution

157. The figure given below represents an experiment to demonstrate a particular aspect of photosynthesis. The alphabet "A" represents a certain condition inside the flask



In what manner do the leaves 1 and 2 differ at the end of the starch tast

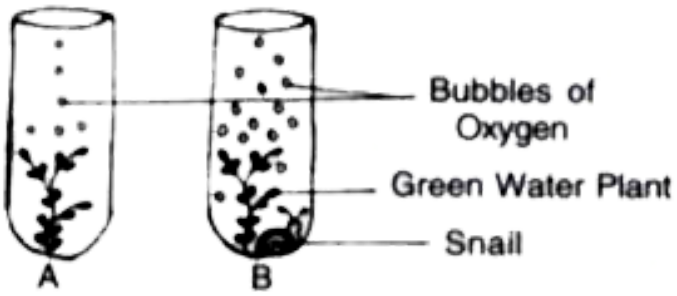
Watch Video Solution

158. Give one example of aquatic plant used in the lab to demonstrate O_2liberation during photosynthesis

Watch Video Solution

159. The diagram below shows two test-tubos A and B. Test-tube A contains a green water plant Test-tube B contains both a green water plant and a snail. Both test tubes are kept in

sunlight Answer the questions that follow

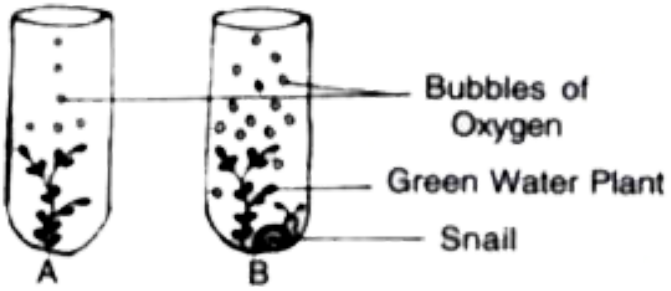


Name the physiological process that releases the bubbles of oxygen

Watch Video Solution

160. The diagram below shows two test-tubes A and B. Test-tube A contains a green water plant Test-tube B contains both a green water

plant and a snail. Both test tubes are kept in sunlight Answer the questions that follow

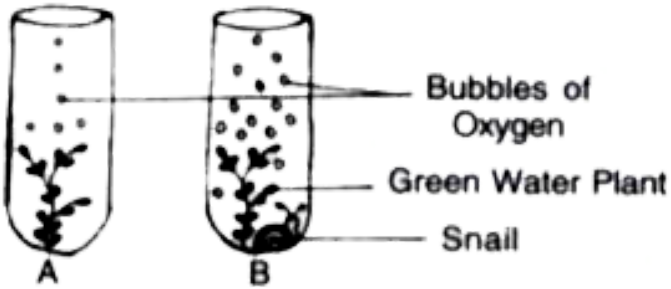


Explain the physiological process as mentioned above

Watch Video Solution

161. The diagram below shows two test-tubes A and B. Test-tube A contains a green water

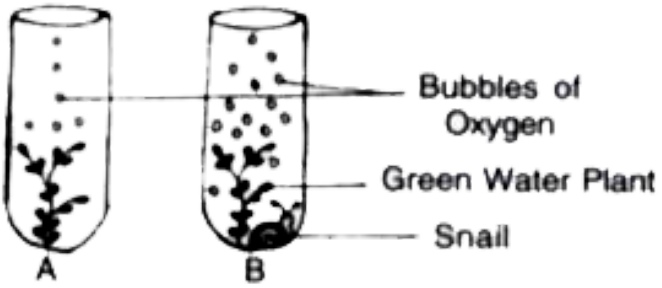
plant Test-tube B contains both a green water plant and a snail. Both test tubes are kept in sunlight Answer the questions that follow



What is the purpose of keeping a snail in test-tube "B?

Watch Video Solution

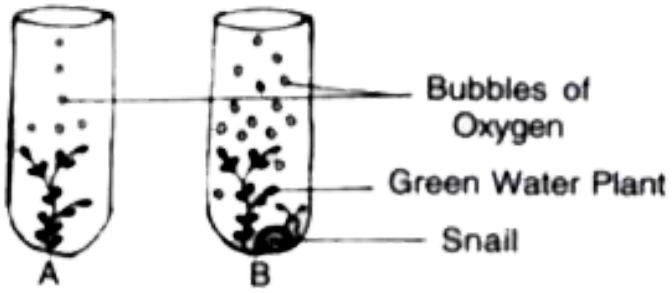
162. The diagram below shows two test-tubos A and B. Test-tube A contains a green water plant Test-tube B contains both a groen water plant and a snail. Both test tubes are kept n sunlight Answer the questions that follow



Why does test-tube 'B' have more bubbles of oxygen

Watch Video Solution

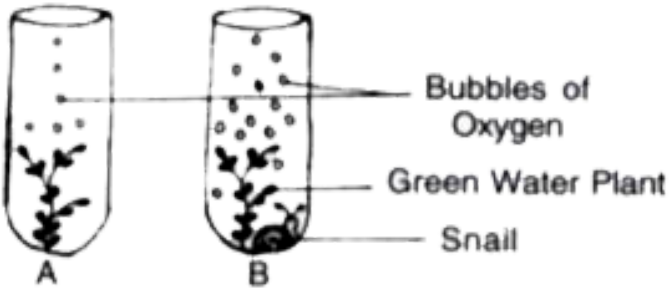
163. The diagram below shows two test-tubos A and B. Test-tube A contains a green water plant Test-tube B contains both a groen water plant and a snail. Both test tubes are kept n sunlight Answer the questions that follow



Give an example of a water plant that can be used in the above experiment.

Watch Video Solution

164. The diagram below shows two test-tubes A and B. Test-tube A contains a green water plant Test-tube B contains both a green water plant and a snail. Both test tubes are kept in sunlight Answer the questions that follow



Write the overall chemical reaction for the above process.

Watch Video Solution

165. The statement given below is incorrect. Rewrite the correct statement by changing the underlined words of the statement

The solvent used to dissolve the chlorophyll pigments while testing a leaf for starch is Soda Time

Watch Video Solution

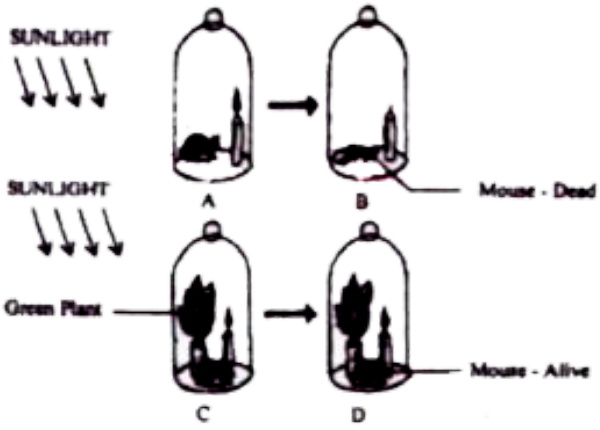
166. The statement given below is incorrect. Rewrite the correct statement by changing the underlined words of the statement

Xylem transports starch from the leaves to all parts of the plant body

Watch Video Solution

167. The diagrams given below represent the relationship between a mouse and a physiological process that occurs in green

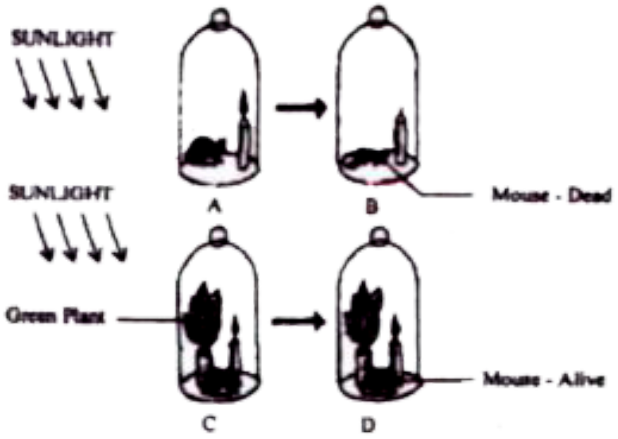
plants. Study the diagrams and answer the questions that follow



Name the physiological process occurring in the green plant that has kept the mouse alive

Watch Video Solution

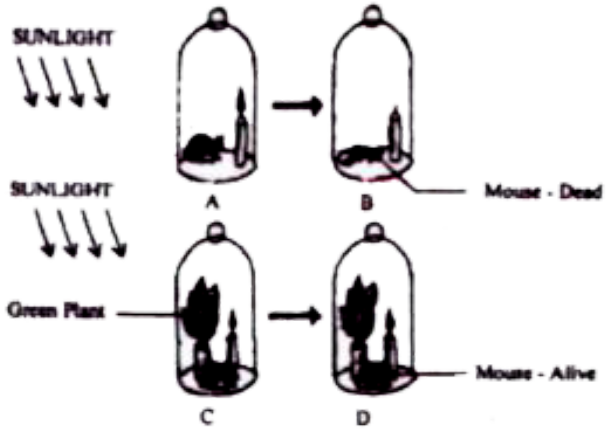
168. The diagrams given below represent the relationship between a mouse and a physiological process that occurs in green plants. Study the diagrams and answer the questions that follow



Explain the physiological process mentioned above

Watch Video Solution

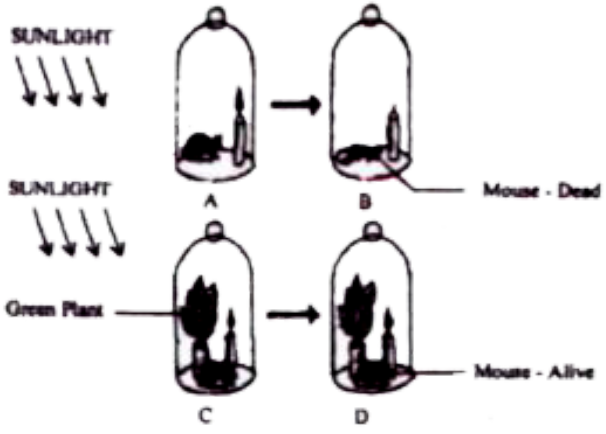
169. The diagrams given below represent the relationship between a mouse and a physiological process that occurs in green plants. Study the diagrams and answer the questions that follow



Why did the mouse die in bell jar B?

Watch Video Solution

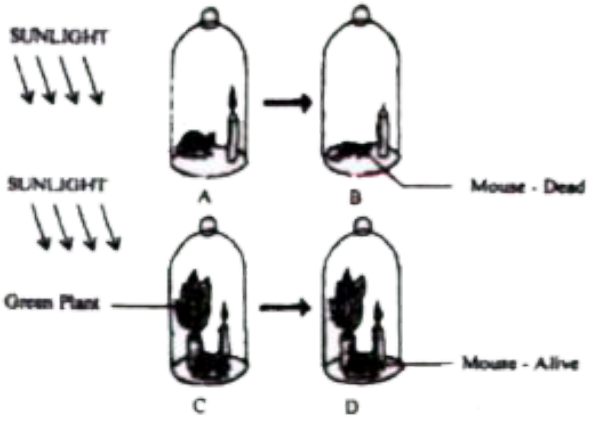
170. The diagrams given below represent the relationship between a mouse and a physiological process that occurs in green plants. Study the diagrams and answer the questions that follow



What is the significance of the process as stated in (for life on earth?

Watch Video Solution

171. The diagrams given below represent the relationship between a mouse and a physiological process that occurs in green plants. Study the diagrams and answer the questions that follow

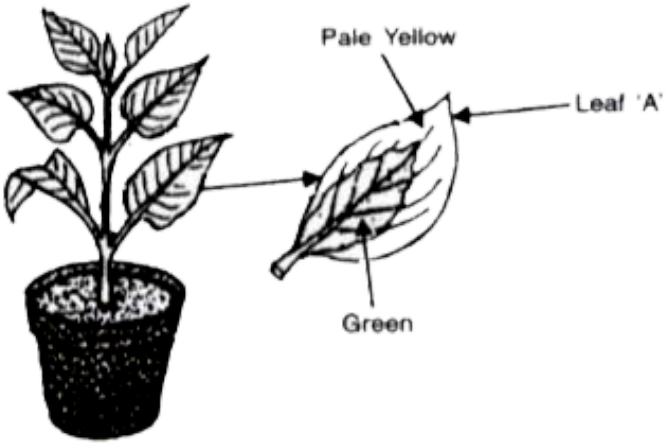


Represent the above mentioned physiological process in the form of a chemical equation

Watch Video Solution

172. A potted plant with variegated leaves was taken in order to prove a factor necessary for photosynthesis. The potted plant was kept in

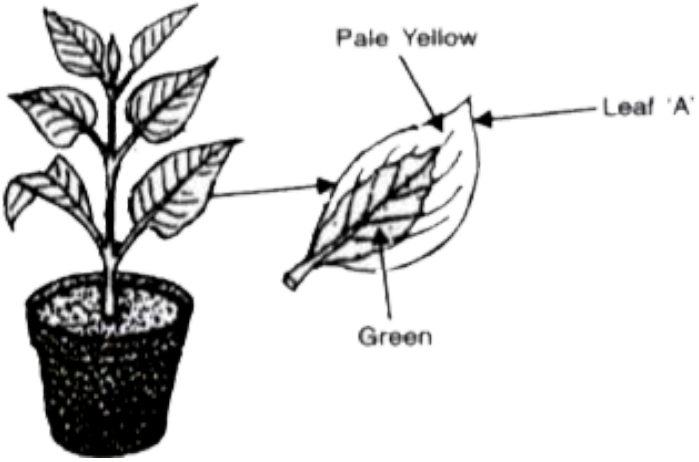
the dark for 24 hours and then placed in bright sunlight for a few hours Observe the diagrams and answer the questions.



What aspect of photosynthesis is being tested in the above diagram?

Watch Video Solution

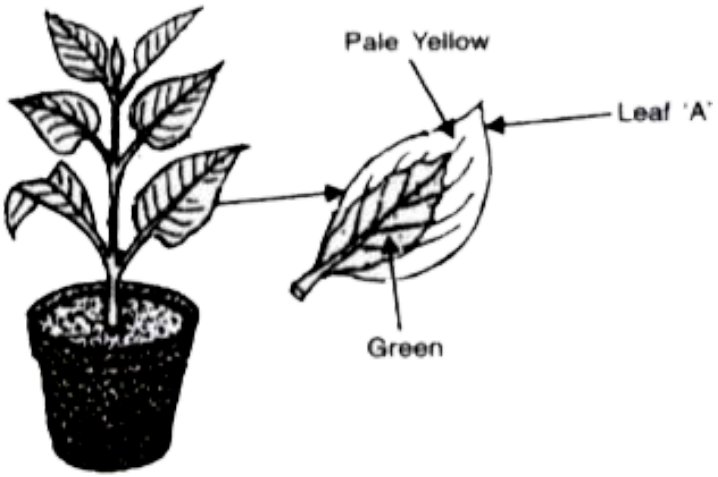
173. A potted plant with variegated leaves was taken in order to prove a factor necessary for photosynthesis. The potted plant was kept in the dark for 24 hours and then placed in bright sunlight for a few hours Observe the diagrams and answer the questions.



Represent the process of photosynthesis in the form of a balanced equation

Watch Video Solution

174. A potted plant with variegated leaves was taken in order to prove a factor necessary for photosynthesis. The potted plant was kept in the dark for 24 hours and then placed in bright sunlight for a few hours Observe the diagrams and answer the questions.



Why was the plant kept in the dark before beginning the experiment?

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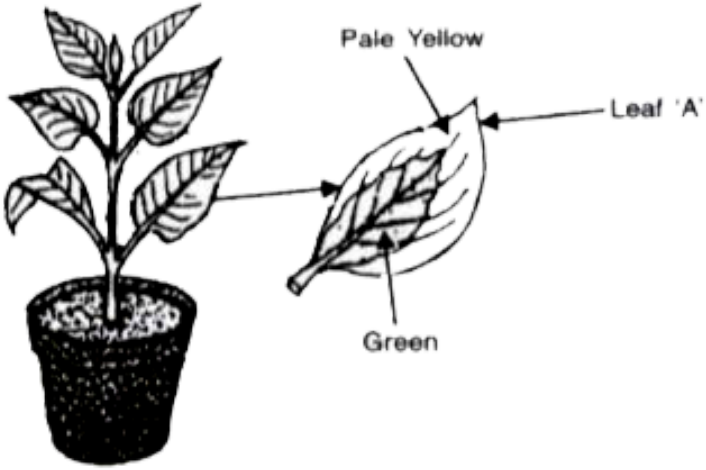
175. A potted plant with variegated leaves was taken in order to prove a factor necessary for photosynthesis. The potted plant was kept in

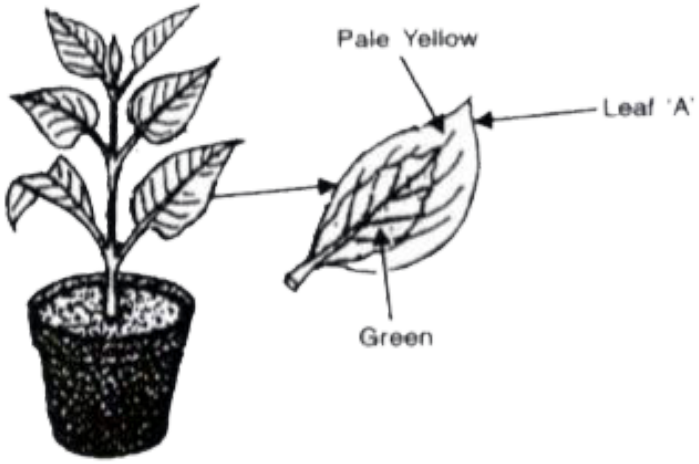
the dark for 24 hours and then placed in bright sunlight for a few hours Observe the diagrams and answer the questions.



What will be the result of the starch test performed on leaf A shown in the diagram? Give an example of a plant with variegated leaves

Watch Video Solution

176. A potted plant with variegated leaves was taken in order to prove a factor necessary for photosynthesis. The potted plant was kept in the dark for 24 hours and then placed in bright sunlight for a few hours Observe the diagrams and answer the questions.



Draw a neat labelled diagram of a chloroplast

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177. Expand the following biological abbreviation ATP

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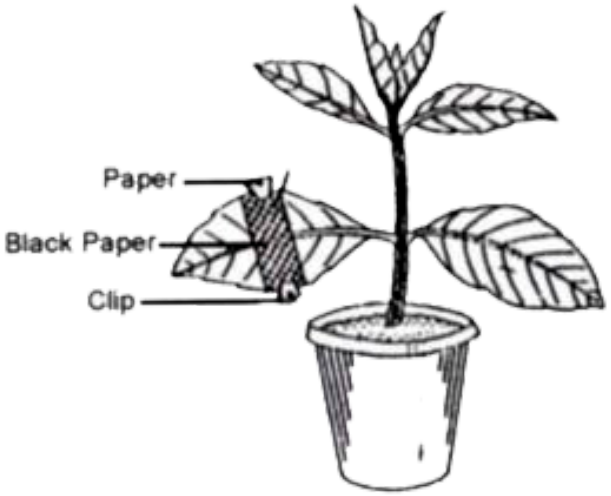
178. The diagram given below represents an experiment to prove the importance of a factor in photosynthesis. Answer the questions that follow



Name the factor studied in this experiment

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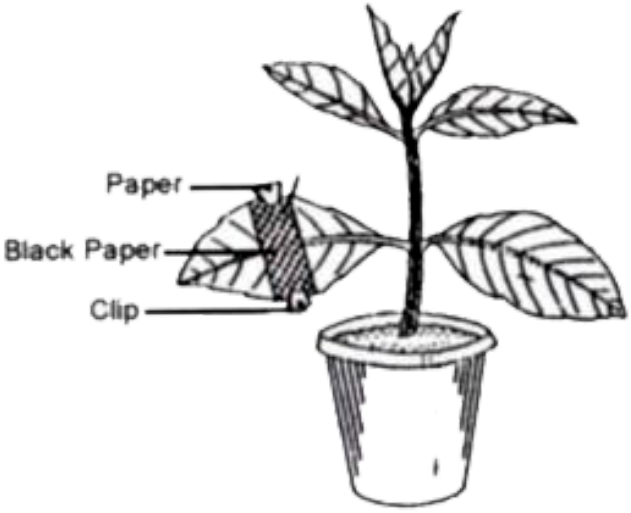
179. The diagram given below represents an experiment to prove the importance of a factor in photosynthesis. Answer the questions that follow



What will you observe in the experimental

What will you observe in the experimental

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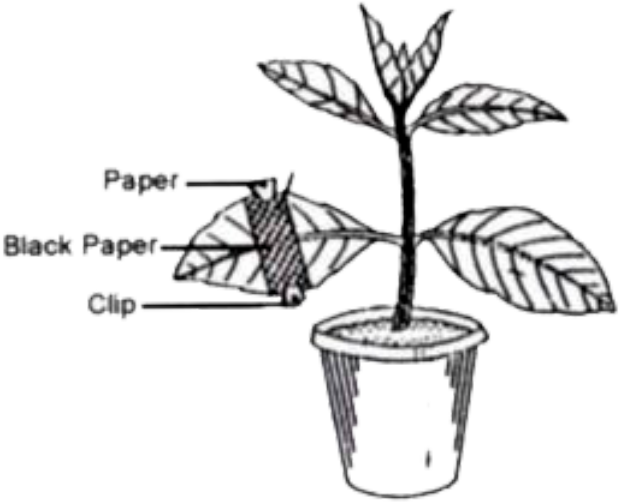
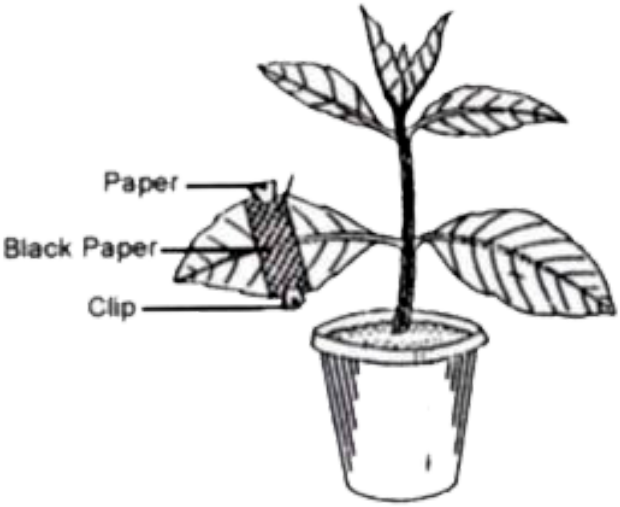
180. The diagram given below represents an experiment to prove the importance of a factor in photosynthesis. Answer the questions that follow



Explain the process of Photosynthesis

Watch Video Solution

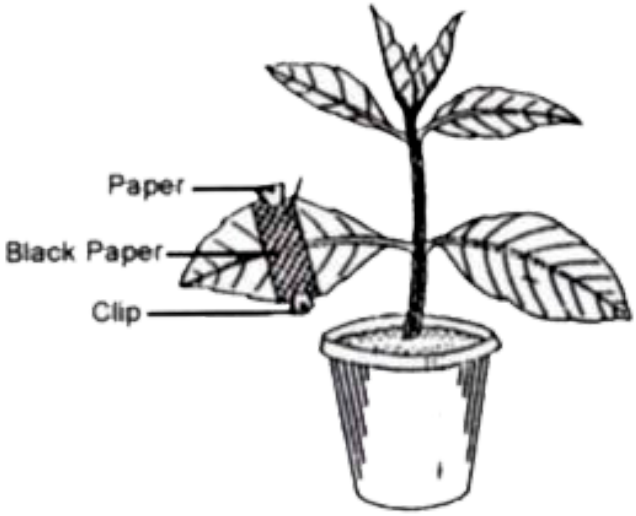
181. The diagram given below represents an experiment to prove the importance of a factor in photosynthesis. Answer the questions that follow



Explain the process of Photosynthesis

Watch Video Solution

182. The diagram given below represents an experiment to prove the importance of a factor in photosynthesis. Answer the questions that follow



Draw a neat, labelled diagram of an

experimental setup to show that oxygen is released during photosynthesis

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Choose The Correct Answer

1. The following can be used to write a word equation for photosynthesis :

1 Carbon dioxide and water

2 Light and chlorophyll

3 Glucose and oxygen

Which shows a correct word equation for photosynthesis?

A. $1 \rightarrow 2$ in the presence of 3

B. $1 \rightarrow 3$ in the presence of 2

C. $2 \rightarrow 3$ in the presence of 1

D. $3 \rightarrow 1$ in the presence of 2

Answer: B

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2. Which two substances are the products of photosynthesis?

A. Carbon dioxide and glucose

B. Carbon dioxide and water

C. Oxygen and carbon dioxide

D. Oxygen and glucose

Answer: D

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3. Where does light reaction of photosynthesis take place?

A. Grana of chloroplast

B. Stroma of chloroplast

C. Cytoplasm of cell

D. Mitochondria

Answer: A

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4. The rate of photosynthesis in not affected by which one of the following factor?

A. CO_2 concentration

B. Light intensity

C. Temperature

D. Wind velocity

Answer: D

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5. The assimilatory powers for dark reaction are:

A. ATP and O_2

B. ATP and NADPH

C. ATP and H_2O

D. O_2 and CO_2

Answer: B

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6. How many water molecules are needed to produce one molecule of glucose during photosynthesis?

A. Six

B. Twelve

C. Eighteen

D. Four

Answer: B

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7. If the rate of respiration becomes more than rate of photosynthesis, plant will:

A. Continue to live, but will not store food

B. Grow more vigorously

C. Stop growing and eventually will die

D. Be killed instantly

Answer: C

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8. Which of the following reactions occurs during photosynthesis?

A. CO_2 is reduced and water is oxidised

B. H_2O is reduced and CO_2 is oxidised

C. BothCO_2 and H_2O are reduced

D. Both CO_2 and H_2O are oxidised.

Answer: A

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9. What is the function of light energy in photosynthesis?

A. Reduce CO_2

B. Split water molecule

C. Synthesise glucose

D. Activate chlorophyll.

Answer: D

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10. In flowering plants food is transported in the form of:

A. Starch

B. Sucrose

C. Glycogen

D. Cellulose

Answer: B

View Text Solution

11. Which internal factor affects the rate of photosynthesis?

A. Light intensity

B. Chlorophyll

C. CO_2 concentration

D. Temperature

Answer: B

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12. Chemical used to absorb CO_2 from inside a flask

A. Calcium chloride

B. Potassium hydroxide

C. Pyrogallic Acid

D. Iodine solution

Answer: B

View Text Solution

13. Which of the following is not the phase of light reaction?

A. Water splitting

B. Oxygen release

C. Carbon dioxide release

D. Light absorption

Answer: C

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14. Why is the green leaf boiled with water in the test of starch?

A. Remove the starch

B. Kill the microbes

C. Remove chlorophyll

D. Kill the cell

Answer: D

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Complete The Following Statements

1. Photosynthesis provides _____ for all animal life including humans.

A. Food

B. Oxygen

C. CO_2

D. Both (a) and (b)

Answer: D

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2. All green plants synthesise food using as raw materials_____.

A. O_2 and H_2O

B. CO_2

C. H_2O

D. Both b and c

Answer: D

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3. _____are the essential needs for photosynthesis.

A. Chlorophyll and O_2

B. Sunlight and CO_2

C. Chlorophyll and sunlight

D. Plastids and sunlight

Answer: C

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4. Plants release as_____ a waste product during photosynthesis.

A. H_2O

B. H_2

C. CO_2

D. O_2

Answer: D

View Text Solution

5. Chloroplasts are present in_____ cells of leaf.

A. Epidermis

B. Palisade mesophyll

C. Spongy mesophyll

D. both (b) and (c)

Answer: D

View Text Solution

6. Light energy is trapped especially by the chlorophyll of_____.

A. Chloroplast

B. Plastid

C. Palisade mesophyll

D. Spongy mesophyll

Answer: C

View Text Solution

7. A pile of fattened sacs in the chloroplast are_____.

A. Stroma

B. Granum

C. Fret

D. Thylakoids

Answer: B

View Text Solution

8. The colourless substance in chloroplast is_____.

A. Cortex

B. Grana

C. Stroma

D. Lamella

Answer: C

View Text Solution

9. Chlorophyll is present in _____.

A. Granum

B. Thylakoids

C. Matrix

D. Outer wall of chloroplast

Answer: B

View Text Solution

10. _____are minute openings occurring in large number on the ventral surface of leaf.

A. Stroma

B. Stomata

C. Hydathodes

D. Lenticels

Answer: B

View Text Solution

11. Chlorophyll is present in_____.

A. Guard cells of stomata

B. Stomata pore

C. Old stem

D. Epidermal cells

Answer: A

View Text Solution

12. In the guard cells, if the water content fall short,_____ occurs which makes the cells.

A. Endosmosis, turgid

B. Exosmosis, turgid

C. Endosmosis, limp

D. Exosmosis, flaccid

Answer: D

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13. Photosynthesis in guard cells leads to the production of_____.

A. ADP

B. ATP

C. $ADP + \Pi$

D. AMP

Answer: B

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14. CO_2 from the atmosphere enters the leaf by_____.

A. Osmosis

B. Imbibition

C. Diffusion

D. Active transport

Answer: C

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15. Amolecule of is____ produced by the process of photosynthesis.

A. Starch

B. $C_6H_{12}O_6$

C. Ribose

D. $C_{12}H_{22}O_{11}$

Answer: B

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16. Light dependent phase is also known as_____.

A. Photosynthesis

B. Biological phase

C. Photochemical phase

D. Physiological reaction

Answer: C

View Text Solution

17. The chlorophyll gets activated by absorbing_____.

A. Proton

B. Photon

C. Neutron

D. Water

Answer: B

View Text Solution

18. The absorbed energy is used in_____.

A. Photolysis of water

B. Splitting of chlorophyll molecule

C. Electrolysis of water

D. Activation of carbon dioxide

Answer: A

View Text Solution

19. _____are released during photolysis of water.

A. Protons

B. Photons

C. Electrons

D. Neutrons

Answer: C

View Text Solution

20. Light independent phase takes place in _____of chloroplast.

A. Ground substance

B. Thylakoids

C. Stroma

D. Both (a) and (c)

Answer: C

View Text Solution

21. _____is a special CO_2 acceptor.

A. Ribulose Phosphate

B. Ribulose bisphosphate

C. Ribulose bisphosphate

D. Ribulose Phosphate

Answer: C

View Text Solution

22. A plant is kept in a dark cupboard for about 48 hours before conducting any experiment on photosynthesis to_____.

A. Remove starch from the plant.

B. Ensure that starch is not translocated from the leaves.

C. Remove chlorophyll from the leaf of the plant.

D. Remove starch from the experimental leaf

Answer: A

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23. _____is formed in the leaf during photosynthesis.

A. Sucrose

B. Glucose

C. Galactose

D. All of the above

Answer: B

View Text Solution

24. Glucose is converted to _____for temporary storage in the leaf.

A. Disaccharide

B. Soluble sugar

C. Glycogen

D. Starch

Answer: D

View Text Solution

25. In Potato, food is stored in the form of.

A. Glucose

B. Sucrose

C. Starch

D. Glycogen

Answer: C

View Text Solution

26. _____is a term related to the transport of food to the different parts of a plant.

A. Transformation

B. Translation

C. Translocation

D. Dislocation

Answer: C

View Text Solution

27. As an adaptation in leaf for photosynthesis, _____are transparent and water proof.

A. Upper and lower epidermis

B. Cuticle and lower epidermis

C. Monosaccharide

D. Insoluble sugar

Answer: B

View Text Solution

28. Numerous_____ allow rapid exchange of gases.

A. Leaves

B. Chloroplasts

C. Stomata

D. Cuticle

Answer: C

View Text Solution

29. Extensive vein system is for rapid transport to and from the_____.

A. Epidermal cells

B. Cuticle

C. Stomata

D. Mesophyll cells

Answer: D

View Text Solution

30. Every experiment of photosynthesis starts with the process of_____.

A. Removal of chlorophyll

B. Filling the cells

C. Killing the microbes

D. Removal of starch

Answer: D

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Name The Following

1. Coleus, Geranium and Croton are the plants with_____.

A. Various leaves

B. Green leaves

C. Non-Green leaves

D. Variegated leaves

Answer: D

View Text Solution

2. The chemical used to test starch

A. Soda lime

B. Carbolic acid

C. Methylated spirit

D. Iodine

Answer: D

View Text Solution

3. The plastids which impart green colour to leaves.

A. Chloroplast

B. Leucoplast

C. Xanthophyll

D. Carotenes

Answer: A

View Text Solution

4. The plastids which store starch in plants.

A. Chromoplasts

B. Chloroplasts

C. Leucoplast

D. none of these

Answer: C

View Text Solution

5. Part of chloroplast where biosynthetic phase occurs.

A. Thylakoid

B. Granum

C. Mitochondria

D. Stroma

Answer: D

View Text Solution

6. Light induced reactions which lead to splitting of water.

A. Photolysis

B. Electrolysis

C. Photo-oxidation

D. Activation

Answer: A

View Text Solution

Explain The Following Terms

1. Photolysis

A. Splitting of water molecules into hydrogen ions and oxygen in the presence of light in grana.

B. Splitting of water molecules into hydrogen ions and oxygen in the presence of light in the stroma.

C. Splitting of water molecules into hydrogen ions and oxygen in the absence of light in grana.

D. Splitting of water molecules into hydrogen ions and oxygen in the absent of light in stoma

Answer: A

View Text Solution

2. Photosynthesis

A. The process by which plant cells containing chlorophyll prepare glucose from CO_2 and H_2O in the presence of sunlight.

B. The process by which plant cells having pigments, use water and carbon dioxide to produce glucose in the presence of sunlight.

C. The activation of chlorophyll when sunlight falls on the leaves to produce glucose.

D. The process of synthesizing energy rich ATP molecules in the presence of light.

Answer: A

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3. Photophosphorylation

A. A process in which a phosphate group is added to a molecule, such as a sugar or a protein.

B. The process of synthesizing energy rich ATP molecules from ADP in the presence of sunlight

C. A biochemical process that involves the addition of phosphate to an organic compound.

D. A biochemical process that involves the addition of phosphate to an organic compound.

Answer: B

View Text Solution

4. Destarching .

A. The process of removal of all the stored starch of a plant by keeping in dark.

B. Addition of starch after formation of glucose during photosynthesis.

C. Polymerisation of starch after formation of glucose during photosynthesis.

D. Keeping the plant in dark for storage of starch.

Answer: A

View Text Solution

5. Dark reaction

A. The carbon-fixing reaction which is a light dependent process in which sugar molecules are formed from the carbon dioxide and water.

B. This reactions require darkness for carbon dioxide fixation to produce glucose.

C. The carbon-fixing reaction which involves combination of hydrogen released by NADPH with CO_2 to form the final product glucose.

D. In this, plants use CO_2 with ATP and NADPH from the light reactions to produce glucose takes place in the grana of the chloroplast.

Answer: C

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State The Exact Location Of The Following

1. Stomata

A. More the upper surface of dorsiventral leaves

B. More on the lower surface of the dorsiventral leaves

C. Both upper and lower surface of the dorsiventral leaves

D. None of the above.

Answer: B

View Text Solution

2. Thylakoids

A. In the inner membrane of the chloroplast

B. Wall of the chloroplast

C. In the chlorophyll

D. In the stroma of the chloroplast

Answer: D

View Text Solution

3. Palisade parenchyma

A. Between the upper and lower epidermis of dicot leaves.

B. Between the upper epidermis and spongy parenchyma of dicot leaves.

C. Between the lower epidermis and spongy parenchyma of dicot leaves.

D. Between the upper and lower epidermis of monocot leaves.

Answer: B

View Text Solution

State The Function Of The Following

1. Stroma.

A. Site of photolysis of photosynthesis

B. Site of photochemical phase of photosynthesis

C. Site of light dependent phase of photosynthesis

D. Site of light independent phase of photosynthesis

Answer: D

View Text Solution

2. Grana.

A. The chlorophyll molecules present in grana converts the light energy into chemical energy, ATP.

B. Provide the enzymes necessary for the light independent phase of photosynthesis

C. Helps in the fixation of carbon dioxide as photolysis takes place in grana.

D. It is the site of light independent phase of photosynthesis

Answer: A

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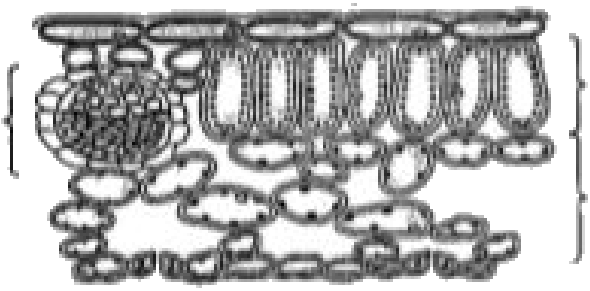
Diagram Based Questions

1. The diagram shows part of a leaf as seen in cross section under the microscope.



Name the regions 1, 2 and 3.

	Region 1	Region 2	Region 3
(a)	Palisade mesophyll	Vascular bundle	Spongy mesophyll
(b)	Spongy mesophyll	Palisade mesophyll	Vascular bundle
(c)	Vascular bundle	Palisade mesophyll	Spongy mesophyll
(d)	Vascular bundle	Spongy mesophyll	Palisade mesophyll

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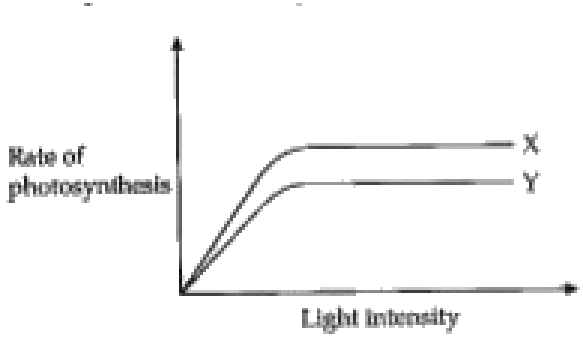
2. Curve X on the graph shows the effect of light intensity on the rate of photosynthesis.



How have the conditions changed to produce curve Y?

A. Decreased concentration of carbon dioxide.

B. Decreased light intensity.

C. Increased concentration of carbon dioxide.

D. Increased light intensity.

Answer: A

View Text Solution

3. In a photosynthesis experiment, a plant is left in bright sunlight for several hours. A leaf is then removed from the plant and tested for starch, using iodine solution. The diagram

shows the leaf from the plant that was used in the experiment.

Which diagram shows the result of the experiment?

A. 

B. 

C. 

D. 

Answer: C

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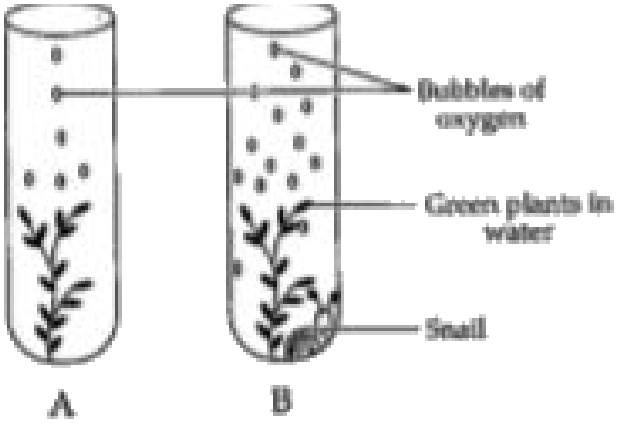
4. The diagram below shows two test-tubes A and B. Test-tube A contains a green water plant. Testtube B contains both a green water plant and a snail. Both Test-tubes are kept in sunlight.



Which water plant can be used in the above experiment?

A. Hydrilla

B. Chara

C. Ectocarpus

D. Ulva

Answer: A

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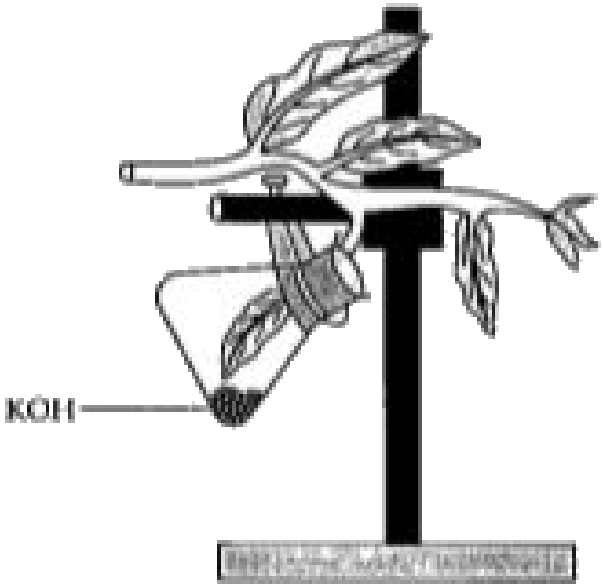
5. A twig of a plant was kept inside a flask as shown is the diagram and it was kept in sunlight for a few hours.



What is the aim of the experiment ?

A. To prove that carbon dioxide is necessary for photosynthesis.

B. Sunlight is necessary for photosynthesis.

C. To show that O_2 was used up by the inside leaf part.

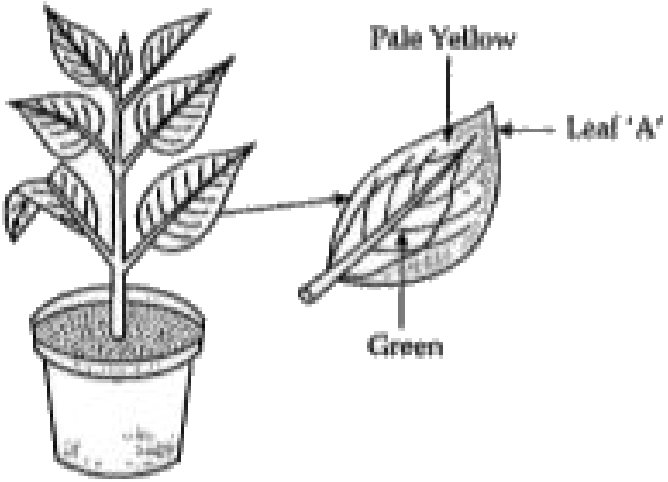
D. To show that chlorophyll is necessary for photosynthesis

Answer: A

View Text Solution

6. A potted plant with variegated leaves was taken in order to prove a factor necessary for photosynthesis. The potted plant was kept in the dark for 24 hours and then placed in bright sunlight for a few hours. What aspect

of photosynthesis is being tested in the below diagram?



A. Carbon dioxide is necessary for photosynthesis.

B. Sunlight is necessary for photosynthesis.

C. O_2 is necessary for photosynthesis.

D. Chlorophyll is necessary for photosynthesis.

Answer: D

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Assertion Reason

1. Assertion: The grass growing in the shade turns yellow after a few days.

Reason: If the grass is devoid of sunlight new

chlorophyll is not formed and the old chlorophyll disintegrates.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both Assertion and Reason are false.

Answer: A

View Text Solution

2. Assertion: Splitting of water takes place in the grana of the chloroplast

Reason: Splitting of water is also known as photolysis of water.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both Assertion and Reason are false.

Answer: A

View Text Solution

3. Assertion: The hydrogen ions produced in photolysis are used to reduce NADP to form NADPH.

Reason: The electrons (e) produced in photolysis are used for conversion of ADP to ATP.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both Assertion and Reason are false.

Answer: B

View Text Solution

4. Assertion: Photochemical phase is also called light dependent phase or light reaction.
Reason: Light reaction is carried out in the stroma of chloroplasts.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both Assertion and Reason are false.

Answer: C

View Text Solution

5. Assertion: The rate of photosynthesis increases linearly with increasing light intensity.

Reason: At low intensity of light, photosynthetic activity is increased.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both Assertion and Reason are false.

Answer: C

View Text Solution

6. Assertion: Green plants are primary food producers.

Reason: Carbohydrates that are formed during photosynthesis form the food of man and herbivorous animals.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true, but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If both Assertion and Reason are false.

Answer: A

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