BIOLOGY

BOOKS - MODERN PUBLICATION

MINERAL NUTRITION

Exercise

1. What are nutrients?

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2. Which elements are needed as trace elements for healthy growth of plants?

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3. Deficiency of which element is responsible for early fall of leaves?

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4. From where do the plants get the supply of hydrogen?

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5. Name the element used by plant to form cytochrome.

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6. What is exanthema?

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7. What does CAN stands for?

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8. What is the role of sodium and calcium in the permeability of membrane?

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9. What happens due to deficiency of molybdenum in cauliflower?

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10. Can the addition of calcium carbonate to soil improve the growth ? How?

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11. Would you prefer to feed minerals to the plant through leaf or through root and why?

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12. What would happen if all the nitrogen fixing bacteria were completely destroyed?

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13. Plants usually show better growth when ammonium sulphate is added to the soil. How would you explain this behaviour?

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14. State what will happen if plants are supplied with:

excess of sulphur.

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15. State what will happen if plants are supplied with:

low content of nitrogen

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16. State what will happen if plants are supplied with:

excess of nitrogen.

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17. Gray spots of oats are caused by deficiency of:

A. Cu

B. Zn

C. Mn

D. Fe

Answer:

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18. Hydroponics is

A. Water

B. Solution containing all the nutrients

C. Green house

D. Liquid

Answer:

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19. The major portion of the dry weight of plants comprises of:

A. Calcium,magnesium and sulphur

B. Carbon,nitrogen and hydrogen

C. Carbon,hyudrogne and oxygen

D. Nitrogen,pophorus nd potassium.

Answer:

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20. Boron in green plants assists in:

A. Acting as enzyme cofactor

B. Photosynthesis

C. Sugar transport

D. Activation of enzymes

Answer:

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21. If by raidations all nitrogenase enzymes are inactivated, then there will be no:

A. Fixation of nitogen in legumes

B. conversion of nitrate to nitrite

C. Fixationo f atmospheric nitrgoen

D. Conversion of ammonium to nitrate

Answer:

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22. The most abudant element present in the plants is:

A. Nitrgoen

B. Mangenese

C. Iron

D. Carbon

Answer:

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23. Passive absorption of mineral salts is not dependent of:

A. Osmosis

B. Diffusion

C. Donnan equilibrium

D. Ion exchange.

Answer:

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24. Middle lamella mainly contains:

A. Ca

B. Mg

C. Na

D. K

Answer:

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25. The appearance of yellow edges to leaves is due to deficiency of this mineral element,

A. Calcium

B. Mangenesium

C. Potassium

D. Sulphur

Answer:

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26. The macronutrients which is an essential component of all organic compounds, yet not obtained by plants from soil is:

A. Nitrogen

B. Carbon

C. Phosphorus

D. Magnesium

Answer:

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27. Which is essiential for root hair growth?

A. Zn

B. Ca

C. Mo

D. S

Answer:

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28. Prolonged liberal irrigation of agricultural fields is likely to create the problems of:

A. Acidity

B. Aridity

C. Salinity

D. Metal toxicity

Answer:

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29. The deficiencies of micronutrients, not only affects growth of plants but also vital functions such as photosynthetic and mitochondrial electron flow. Among the list given below, Which group of these elements shall effect most, both photosynthetic and mitochondrail electron transport:

A. Cu,Mn,Fe

B. Co,Ni,Mo

C. Mn,Co,Ca

D. Ca,K,Na

Answer:

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30. The ability of venux fly-trap to capture insects id due to:

A. Chemical stimulation by the prey

B. A passive process requiring no special ability on the part of plant

C. Specialazed "muscle like" cells

D. Rapid turgor pressure changes.

Answer:

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31. Pitcher in Nepenthes is the modified form of:

A. leaf

B. Lamina

C. Leaf apex

D. Leaf base.

Answer:

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32. The number of essential nutrients required for normal growth of plants is:

A. 16

B. 20

C. 25

D. 10

Answer:

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33. Nane the element that plays an important role in biological nitrogen fixation:

A. Molybdenum

B. Mangense

C. Copper

D. Zinc.

Answer:

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34. Conversion of ammonia into nitrate through Nitrosomonas is called:

A. Nitrogen fixation

B. Nitrification

C. Denitrification

D. Ammonification.

Answer:

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35. Bacteria which reduce nitrate in soil to nitrogen are:

A. Nitrosomonas

B. Pseudomonas

C. Rhizobium

D. Clostridium

Answer:

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36. Which of the following is a flowering plant,whose nodules containing filamentous nitrogen fixing micro-organism

A. Crotalaria juncea

B. Cycas revoluta

C. Cicer arietinum

D. Casurarina

Answer:

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37. Which one of the following statements is correct:

A. Both Azotobacter and Rhizobium fix atmospheric nitrogen in root nodules of

plant.

B. Cyanobacteria such as Anahena and Nostoc are important mobilizers of phophates for plant nutirition in soil.

C. At present it is not possible to grow maize without chemical fertilizers

D. Extensive use of chemicaol fertilizers may lead to eutrophication of nearby water bodies.

Answer:

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38. Which one of the following is not an essential element for plants?

A. Aluminium

B. Copper

C. Iron

D. Zinc.

Answer:

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39. Sulphur is not a constituent of:

A. Cysteine

B. methionine

C. Ferredoxin

D. Pyridoxine

Answer:

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40. Function of leghamoglobin a red pigment in root nudules of legguminous plant:

A. To regulate O_2 supply in cells

B. To regulate CO_2 supply in cells

C. To regulate production of phenolic compounds

D. To regulate the Mo supply in cells

Answer:

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41. Which one of the following is micronutrient in platns?

A. Magnesium

B. Zinc

C. Potasium

D. Calcium

Answer:

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42. Hydroponics is method of:

A. Water conservation

B. Plant development in water without soil

C. plant development without soil

D. Plant development in saline soil

Answer:

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43. Fill in the blanks:

The deficiency of magnesium result in ....in the plants.

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44. Fill in the blanks:

.... helps in the conversion of oxalic acid into calcium oxalate in plant cells.

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45. Fill in the blanks:

The deficiency of ..... causes the death of the stem and root apices.

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46. Fill in the blanks:

The deficiency of copper in Citrus results in disease known as..... .

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47. Fill in the blanks:

Drought spots of apples is caused by the deficiency of .....

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48. Fill in the blanks:

The echnique of cultuning plants in nutrient solutions is known as..... .

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49. Fill in the blanks:

Abbreviation NPK means ..... .

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50. Fill in the blanks:

The conversion of ammonia to nitrate is called..... .

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51. Fill in the blanks:

Absorption of mineral ions is a selective process and takes place ..... concentration.

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52. Fill in the blanks:

Sundew is an ..... plant.

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53. Fill in the blank

Elements which are required by the plants in minute quantities are called .....

54. Fill in the blank

Carbon is absorbed by the plant as .....from the air.

55. Write 'True' or 'False'

Reclamation disease of cereals and legumes is caused by deficiency of phosphorus.

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56. Write 'True' or 'False'

The deficiency of Molybdenum induces whip tail disease of cauliflower.

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57. True or False

Boron is related to synthesis of plant auxins.

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58. True or False

Insectivorous plants by catching insects get an additional supply of vitamins.

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59. True or False

Leghaemoglobin has the ability to combine very rapidly with oxygen and thus act as oxygen carrier.

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60. True or False

Reduction of nitrates to nitrites is carried by an enzyme called nitrate reductase, which I flavoprotein and contains iron for its activity.

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61. True or False

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62. Write 'True' or 'False'

Deficient microelements are generally sprayed

over the plants and they are called as folliar fertizers.

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63. Write 'True' or 'False'

Decreased availability of boron results in appearance of necrotic spot

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64. Write 'True' or 'False'

Intervential chlorosis is caused by the deficiency of calcium.

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65. Write 'True' or 'False'

Chlorosis in Sulphur deficient plants appears in young leaves only.

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66. Give reasons,why?

Farmers grow crop of Trifolium (Family Leguminosae) and plough it back in the field to reemove the nitrogen deficiency uin soil.

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67. Nitrogenase acts under anaerobic conditions and carries on the process of nitrogen fixation.

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68. Magnesium deficiency in plants leads to chlorosis in leaves.

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69. Active Absorption of salts takes place against the concertration gradient.

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70. Give reasons,why?

Nitrogen deficiency leads to formation of purple colour in stems etc.of some plants.

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71. Give reasons,why?

Algae accumulate plenty of solutes to avoid plasmolysis.

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72. Give reasons,why?

Plants usually form urea and required the enzyme urease.

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73. Give reasons,why?

The movement of ions form endodermis to xylem is an active process.

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74. Give reasons, why?

Rhizobium aggregates have been noticed at specific sites on curved root hairs.

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75. These questions consist of two statements each,printed as Assertion and Reason.While asnwering these questions you are required to chose any one of the following four responses. If both Assertion and Reason are true and Reason in correct explanation of Assertion.

If both assertion and Reason are true but reason is not correct explanation of Assertion.

If Assertion is true but Reason is false.

If both Assertion and Reason are false.

Assertion:Stomata open during the day.

Reason:Stomata help in gaseous exchange.

A. A

B. B

C. C

D. D

Answer:

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If both Assertion and Reason are false.

Assertion:NPK are critical elements.

Reason:NPK fertilizers contain nitrophosphate and potassium.

A. A

B. B

C. C

D. D

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Watch Video Solution

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Assertion:Potometer is used to measure the rate of transpiration.

Reason:it is based on prinicple that water lost in transpiration is equal to water absorbed.

A. A

B. B

C. C

D. D

Answer:

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78. These questions consist of two statements each,printed as Assertion and Reason.While asnwering these questions you are required to chose any one of the following four responses.

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If both Assertion and Reason are false.

Assertion:The nitrosomonas group oxidizes ammonia to nitrite.

Reason:The nitrifying bacterial obtain their energy from the oxidation of ammonium and nitrite ions.

A. A

B. B

C. C

D. D

Answer:

Watch Video Solution

80. These questions consist of two statements each,printed as Assertion and Reason.While asnwering these questions you are required to

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If Assertion is true but Reason is false.

If both Assertion and Reason are false.

Assertion:Minerals are mainly absorbed by roots which are in direct contact with atmosphere.

reason:The absorbed mineral elements are transported from leaves to stem through xylem.

A. A

B. B

C. C

D. D

Answer:

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If Assertion is true but Reason is false.

If both Assertion and Reason are false.

Assertion:Calcium deficiency sympotoms first appears in apuical region.

Reason:Calcium is highly mobile in plants.

A. A

B. B

C. C

D. D

Answer:

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82. These questions consist of two statements each,printed as Assertion and Reason.While asnwering these questions you are required to chose any one of the following four responses. If both Assertion and Reason are true and

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If both assertion and Reason are true but reason is not correct explanation of Assertion.

If Assertion is true but Reason is false.

If both Assertion and Reason are false.

Assertion:Copper is a trace element.

Reason:Because,the movement of coper in plant can be easily traced.

A. A

B. B

C. C

D. D

Answer:

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83. These questions consist of two statements each,printed as Assertion and Reason.While asnwering these questions you are required to chose any one of the following four responses. If both Assertion and Reason are true and Reason in correct explanation of Assertion.

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Reason:it is based on prinicple that water lost in transpiration is equal to water absorbed.

A. A

B. B

C. C

D. D

Answer:

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If both assertion and Reason are true but reason is not correct explanation of Assertion.

If Assertion is true but Reason is false.

If both Assertion and Reason are false.

Assertion:Bacilius polymxa,clostridium are examples of anaerobic bacteria.

Reason:These bacteria show the phenomenon of symbiotic nitrogen fixation.

A. A

B. B

C. C

D. D

Answer:

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85. These questions consist of two statements each,printed as Assertion and Reason.While asnwering these questions you are required to chose any one of the following four responses. If both Assertion and Reason are true and Reason in correct explanation of Assertion.

If both assertion and Reason are true but reason is not correct explanation of Assertion.

If Assertion is true but Reason is false.

If both Assertion and Reason are false.

Assertion:Chlorine plays important role in dark reactions of photosynthesis.

Reason: Chlorine plays an important role in process of seed germination.

A. A

B. B

C. C

D. D

Answer:

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86. These questions consist of two statements each,printed as Assertion and Reason.While asnwering these questions you are required to chose any one of the following four responses. If both Assertion and Reason are true and Reason in correct explanation of Assertion.

If both assertion and Reason are true but reason is not correct explanation of Assertion.

If Assertion is true but Reason is false.

If both Assertion and Reason are false.

Assertion:An essential element is irreplaceable for plant growth.

Reason:An essential element occurs in plant seeds.

A. A

B. B

C. C

D. D

Answer:

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87. These questions consist of two statements each,printed as Assertion and Reason.While asnwering these questions you are required to chose any one of the following four responses. If both Assertion and Reason are true and Reason in correct explanation of Assertion.

If both assertion and Reason are true but reason is not correct explanation of Assertion.

If Assertion is true but Reason is false.

If both Assertion and Reason are false.

Assertion:If you burn a plant,its nitrogen componenet is given of as ammonia and other gases.

Reason:Hydroponics does not allows plant to grow well if they are supplied with all the mineral nutrients they need.

A. A

B. B

C. C

D. D

Answer:

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88. These questions consist of two statements each,printed as Assertion and Reason.While asnwering these questions you are required to chose any one of the following four responses. If both Assertion and Reason are true and

Reason in correct explanation of Assertion.

If both assertion and Reason are true but reason is not correct explanation of Assertion.

If Assertion is true but Reason is false.

If both Assertion and Reason are false.

Assertion:Deficiency of molybdenum leads to appearance of whitptail disease in crucifers.

Reason:Leaf blade(lamina) degenerates,petiole and mid-rib prersists.

A. A

B. B

C. C

D. D

Answer:

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89. Give one function of Rhizobium.

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90. What are hydroponics?

Watch Video Solution

91. Name the enzyme responsible for nitrogen reduction.

Watch Video Solution

92. Expand NAD.

Watch Video Solution

93. From where do the plants get the supply of hydrogen?

Watch Video Solution

94. Which are the two macronutrients that usually play important role in majority of plants but very much needed by almost all animals:Calcium,Sodium,Potassium,Iron,Iodine.

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95. Name the pigment that protects nitrogenase.

Watch Video Solution

96. Name the oxygen binding pigment found in root nodules of plants like bean and pea. What is the normal colour of this pigment?

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97. Drosera carries out photosynthesis and still traps insects .Why?

Watch Video Solution

98. Bring out similarity and difference between leghaemoglobin and haemoglobin.

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99. Nitrogen is an esential elemnent for plants and is found in abundance as atmospheric nitrogen.But most plants are unable to use it.Why is it so and in what form do plants utilise them?

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100. Name two free living micro-organims which can fix nitrogen.Also write the name of the water fen and a gymnosperm with whom

some cyanobacteria have symbiotic association.

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101. How the presence of magnesium fulfils the requirements of essentiality of element from growth and development of a plant?

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102. Why do plants of legume family contain more protein than other plants?

Watch Video Solution

103. What is nitrification?

Watch Video Solution

104. A farmer adds Azotobacter culture to the soil before sowing maize. How does it increase

the yield of maize?

Watch Video Solution

105. How do some bacteria carry out nitrification? What are such bacteria called?

Watch Video Solution

106. Write explanatory note on biological nitrogen fixation.

Watch Video Solution

107. Explain the symbiotic nitrogen fixation in leguminous plants.

Watch Video Solution

108. In what form do plants absorb molybdenum from the soil?List any two molybdenum deficiency in plants.

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109. Name the respective mineral nutrient element of plants that:

Is needed in the synthesis of auxins.

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110. Name the respective mineral nutrient element of plants that:

Is a constituent of ferredoxin.

Watch Video Solution

111. Name the respective mineral nutrient element of plants that:

Forms the core consituuent of the ring structure of chlorophyll

Watch Video Solution

112. Name the respective mineral nutrient element of plants that:

Forms the componnet of nitrogenase and nitrate reductase.

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113. In What form do plants absorb Phosphorous or Boron or Magnesium from the soil?Name one cell organelle and one organic molecule that requre phosphorus in the cell.List any two phosphorus deficiency symptoms in leaves.

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114. Give information as asked about following mineral nutrient is plants:

Iron:

it is constituents of .....,

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115. Give information as asked about following mineral nutrient is plants:

Iron:

Its one typical deficiency symptom.

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116. Give information as asked about following mineral nutrient is plants:

Zinc:

The group of enzymes it activates,

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117. Give information as asked about following mineral nutrient is plnats:

Zinc:

It is needed for synthesis of .....

Watch Video Solution

118. Give information as asked about following mineral nutrient is plants:

Phosphorus

The form in which it is absorbed from soil,

Watch Video Solution

119. Give information as asked about following mineral nutrient is plants:

Phosphorus

Its deficiency effect in seed _____.

Watch Video Solution

120. Give the information about the following mineral nutrients in plant as asked against each:

Boron:Chemical form in which absorbed from the soil,deficiency symptom with respect to flower.

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121. Give the information about the following mineral nutrients in plant as asked against each:

Manganese:The best defined function in photosynthesis,its one deficiency symptom in plants.

 Watch Video Solution

122. Give the information about the following mineral nutrients in plant as asked against

each:

Sulphur :Any one amino acid in which it is present ,effect of deficiency on younger leaves.

Watch Video Solution

123. Give the information about the following nutrients in plants as asked against each:

Potassium:The tissue where abudantly present,deficiency effect on internodes.

Watch Video Solution

124. Give the information about the following mineral nutrients in plant as asked against each:

Manganese:The best defined function in photosynthesis,its one deficiency symptom in plants.

 Watch Video Solution

125. Give the information about the following nutrients in plants as asked against each:

Calcium:The chemical form in which it is

absorbed from soil,part where used during cell division.

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126. A section of root nodule of chick-pea plant appears pink:

What is this colour due tod?

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127. A section of root nodule of chick-pea plant appears pink:

What type of condition does the pigment create in the nodules?

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128. A section of root noduleof chick-pae plant appears pink:

Explain the process of biological nitrogne fixation in the root nodules.

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129. In what form is magnesium absorbed by plants from soil?Give two functions of magnesium in plants and its two deficient symptoms.

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130. Write steps involved in biological nitrogen fixation in plnats.

Watch Video Solution

131. Write two uses and two deficiency symptoms of phosphorus in plants.

Watch Video Solution

132. Descriptive biological nitrogen fixation.

Watch Video Solution

133. What are three criteria of essentially of an element?Name the disease cauesd by the deficiency of manganese.

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134. Write explanatory notes on:

Micronutrients

Watch Video Solution

135. Explain the symbiotic nitrogen fixation in leguminous plants.

Watch Video Solution

136. Differentiate between the following,

Micronutrients and macronutrients

Watch Video Solution

137. Differentiate between the following,

Active absorption and pasive absorption of mineral salts.

Watch Video Solution

138. What are the symptoms of mineral deficiency in plants?

Watch Video Solution

139. Describe the process of development of root nodules in a leguminous plant.Name the oxygen scavenger molecule prescribe in root nodules.

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140. Describe the process of progressive reduction of one molecule of nitrogen during nitrogen fixation in leguminous.

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