BIOLOGY

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MINERAL NUTRITION

Textbook Questions And Answers

1. Identify the correct match.

1. Die back disease of citrus	*(i)* Mo
2. Whip tail disease	*(ii)* Zn

3. Brown heart of turnip	*(iii)* Cu
4. Little leaf	*(iv)* B

A. 1. (iii) 2. (ii) 3. (iv) 4. (i)

B. 1. (iii) 2. (i) 3. (iv) 4. (ii)

C. 1. (i) 2. (iii) 3. (ii) 4. (iv)

D. 1. (iii) 2. (iv) 3. (ii) 4. (i)

Answer: B

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2. If a plant is provided with all mineral nutrients but, Mn concentration is increased, what will be the deficiency?

A. Mn prevent the uptake of Fe, Mg but not Ca

B. Mn increase the uptake of Fe, Mg and Ca

C. Only increase the uptake of Ca

D. Prevent the uptake Fe, Mg, and Ca

Answer: A

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3. The element which is not remobilized?

A. Phosphorus

B. Potassium

C. Calcium

D. Nitrogen

Answer: C

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4. Match the correct combination.

Minerals	Role
(a) Molybdenum	1. Chlorophyll
(b) Zinc	2. Methionine
(c) Magnesium	3. Auxin
(d) Sulphur	4. Nitrogenase

A. A-1, B-3, C-4, D-2

B. A-2, B-1, C-3, D-4

C. A-4, B-3, C-1, D-2

D. A-4, B-2, C-1, D-3

Answer: C

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5. Identify the correct statement:

A. (i), (ii) are correct

B. (i), (ii), (iii) are correct

C. only correct

D. all are correct

Answer: B

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6. The nitrogen is present in the atmosphere in huge amount but plants fail to utilize it . Why ?

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7. Why is that in certain plants deficiency symptoms appear first in parts of the plants while in others, they do so in mature organs?

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8. Plant A in a nutrient medium shows whiptail disease. Plant B in a nutrient medium shows a Little leaf disease. Identify mineral deficiency of plant A and B ?

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9. Write the role of nitrogenase enzyme in nitrogen fixation?

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10. Explain the insectivorous mode of nutrition in angiosperms?

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Other Important Questions Answers Mcqs

1. Plants naturallly obtain nutrients from

A. atmosphere

B. water

C. soil

D. all of these

Answer: D

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2. Which of the following are included under micro nutrients:

A. sodium, carbon and hydrogen

B. magnesium, nitrogen and silicon

C. sodium, cobalt and selenium

D. calcium, sulphur and potassium

Answer: C

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3. Who coined the term 'Hydroponics':

A. Julius Von Sachs

B. William Frederick Goerick

C. Liebig

D. Wood word

Answer: B

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4. Selenium is essential for plants:

A. to prevent water lodging

B. to enhance growth

C. to resist drought

D. to prevent transpiration

Answer: A

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5. Give examples of actively mobile minerals.

A. nitrogen and phosphorus

B. iron and manganese

C. sodium and cobalt

D. silicon and selenium

Answer: A

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6. Deficiency symptoms first appear on young leaves due to

A. less active movement of minerals to younger leaves

B. active movement of minerals

C. the immobile nature of mineral

D. none of the above

Answer: C

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7. Molybdenum is essential for the reaction of:

A. hydrolase enzyme

B. nitrogenase enzyme

C. carboxylase enzyme

D. dehydrogenase enzyme

Answer: B

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8. Match the following:

A. Magnesium	*(i)* dehydrogenase
B. Nickel	*(ii)* ion exchange
C. Zinc	*(iii)* chlorophyll
D. Potassium	*(iv)* urease

A. A-(ii), B-(i), C-(iv), D-(iii)

B. A-(iii), B-(ii), C-(i), D-(iv)

C. A-(ii), B-(iv), C-(i), D-(iii)

D. A-(iii), B-(iv), C-(i), D-(ii)

Answer: D

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9. Nitrogen is the essential component of:

A. carbohydrate

B. fatty acids

C. protein

D. none of these

Answer: C

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10. Which of the element is involved in the synthesis of DNA and RNA:

A. calcium

B. magnesium

C. sulphuric

D. potassium

Answer: B

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11. The deficiency of magnesium is the plant causes:

A. necrosis

B. interveinal chlorosis

C. sand drown of tobacco

D. all the above

Answer: D

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12. Sulphur is an essential components of amino acids like:

A. histidine, leucine and aspartic acid

B. valene, alkaline and glycine

C. cystine, cysteine and methionine

D. none of the above

Answer: C

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13. Indicate the correct statement

A. (i) and (ii)

B. (ii) and (iv)

C. (ii) and (iii)

D. (i) and (iii)

Answer: D

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14. Khaira disease of rice is caused by:

A. deficiency of boron

B. deficiency of zinc

C. deficiency of iron

D. deficiency of all the three

Answer: B

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15. Match the following:

A. Marginal chlorosis	*(i)* nitrogen
B. Anthocyanin formation	*(ii)* zinc
C. Hooked leaf tip	*(iii)* potassium
D. Little leaf	*(iv)* calcium

A. A- (ii), B- (iii), C- (i), D- (iv)

B. A- (iii), B- (ii), C- (iv), D- (i)

C. A- (iii), B- (i), C- (iv), D- (ii)

D. A- (iv), B- (iii), C- (i), D- (ii)

Answer: C

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16. Increased concentration of manganese in plants will prevent the uptake of:

A. calcium and potassium

B. sodium and potassium

C. boron and silicon

D. iron and magnesium

Answer: D

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17. Which of the statement is not correct?

A. Aluminium toxicity causes the appearance of brown spots in the leaves.

B. Aluminium toxicity causes the precipitation of nucleic acid.

C. Aluminium toxicity inhibits ATPase activity

D. Aluminium toxicity inhibits cell division.

Answer: A

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18. The techniques of Aeroponics was developed by:

A. Goerick

B. Arnon and Hoagland

C. Soifer Hillel and David Durger

D. Von Sachs

Answer: C

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19. Nitrogen occurs in atmosphere in the form of N_2, two nitrogen atoms joined together by strong:

A. di-covalent bond

B. triple covalent bond

C. non-valent bond

D. none of these

Answer: B

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20. The process of converting atmospheric nitrogen (N_2) into ammonia is termed as:

A. nitrogen cycle

B. nitrification

C. nitrogen fixation

D. ammonification

Answer: C

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21. Find out the odd organism:

A. Rhizobium

B. Cyanobacteria

C. Azolla

D. Pistia

Answer: D

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22. The legume plants secretes phenolics to attract:

A. Azolla

B. Rhizobium

C. Nitrosomonas

D. Streptococcus

Answer: B

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23. Which are the organisms help in nitrogen fixation of lichens:

A. Anabaena and Nostoc

B. Anabaena alone

C. Nostoc alone

D. Anabaena azollae

Answer: A

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24. Nitrogenase enzyme is active:

A. only in aerobic condition

B. only in anaerobic condition

C. both in aerobic and anaerobic condition

D. only in toxic condition

Answer: B

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25. Ammonia $\left(NH_3^+\right)$ is converted into nitrite $\left(NO_2^-\right)$ by a bacterium called:

A. Nitrobacter bacterium

B. Rhizobium

C. Anabaena azollae

D. Nitrosomonas

Answer: D

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26. Decomposition of organic nitrogen (proteins and amino acids) from dead plants and animals into ammonia is called:

A. nitrification

B. ammonification

C. nitrogen fixation

D. denitrification

Answer: B

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27. The bacteria involved in the denitrification process are:

A. E.coli and Anabaena

B. Streptococcus and Bacillus vulgaris

C. Pseudomonas and Thiobacillus

D. none of the above

Answer: C

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28. In the process of ammonium assimilation:

A. Ammonia is converted into nitrites

B. Ammonia is converted into atmospheric nitrogen

C. Ammonia is converted into ammonium ions

D. Ammonia is converted into amino acids

Answer: D

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29. The transfer of amino group (NH_2) from glutamic acid to keto group of keto acid is termed as:

A. Transamination

B. Hydrogenation

C. Nitrification

D. De nitrification

Answer: A

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30. Monotrapa (Indian pipe) absorbs nutrients through:

A. Rhizobium association

B. mycorrhizal association

C. microbial association

D. animal association

Answer: B

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31. Cuscuta is an example of _____

A. partial parasite

B. total root parasite

C. obligate stem parasite

D. partial stem parasite

Answer: C

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32. Indicate the correct statement:

A. Loranthus grows on banana and coconut

B. Loranthus grows on fig and mango trees

C. Balanophora is a stem parasite

D. Viscum is a root parasite

Answer: B

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33. The association of mycorrhizae with higher plants is termed as:

A. Parasitism

B. Mutualism

C. Symbiosis

D. Saprophytic

Answer: C

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34. In Utricularia, the bladder is a modified form of:

A. leaf

B. stem

C. tentacle

D. lamina

Answer: A

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35. Lichens are the indicators of:

A. carbon monoxide

B. nitrogen oxide

C. sulphur di oxide

D. hydrogen sulphide

Answer: C

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Other Important Questions Answers Answer The Following

1. Define micro nutrients of plants.

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2. Mention any two actively mobile minerals.

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3. What is the role of molybdenum in the conversion of nitrogen into ammonia?

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4. What is the role of potassium on osmotic potential of the cell?

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5. What are the deficiency symptoms of nitrogen?

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6. Explain the role of sulphur in plant biochemistry.

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7. Write notes on siderophores.

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8. List out any two iron deficiency symptoms in plants.

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9. What is the role of Boron in plant physiology.

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10. Write down the deficiency symptoms of molybdenum in plants.

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11. Explain briefly about aluminium toxicity on plants.

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12. Write short notes on aeroponics.

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13. Define nitrogen fixation. Mention its types.

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14. Mention any two ways of non-biological nitrogen fixation.

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15. Match the following.

A. *Lichens*	*(i) Anabaena Azolla*
B. *Anthoceros*	*(ii) Frankia*
C. *Azolla*	*(iii) Anabaena and Nostoc*
D. *Casuarina*	*(iv) Nostoc*

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16. Define the term Nitrate assimilation.

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17. Explain the term Transamination.

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18. Explain briefly about total stem parasite.

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19. Give two examples of symbiotic mode of nutrition.

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20. Explain the insectivorous mode of nutrition in angiosperms ?

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21. What are the criteria required for essential minerals?

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22. Explain the unclassified minerals required for plants.

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23. Distinguish between macro and micro nutrients?

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24. Explain briefly the functions and deficiency symptoms of potassium.

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25. What is meant by Chelating agents? Explain the role of EDTA as chemical chelating agent.

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26. Explain the term critical concentration of minerals.

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27. Describe the competitive behaviour of iron and manganese.

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28. Who are people responsible for developing hydroponics?

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29. List out the free living bacteria and fungi responsible for non-symbiotic nitrogen fixation.

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30. Define the term Ammonification.

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31. Describe catalytic amination.

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32. Compare the partial stem parasite and partial root parasite.

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33. Explain the mode of nutrition in pitcher plant.

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34. What is meant by saprophytic mode of nutrition?

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35. Describe briefly the method of nitrogen fixation in leguminous plants.

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36. Write an essay on the functions and deficiency symptoms of macro nutrients.

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37. Describe the role of micro nutrients on plant health and function.

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38. Give the details of minerals and their deficiency symptoms.

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39. Describe the various stages of nirogen cycle.

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40. Describe biological nitrogen fixation with reference to Rhizobium and Legume.

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