



BIOLOGY

BOOKS - KUMAR PRAKASHAN KENDRA BIOLOGY (GUJRATI ENGLISH)

MINERAL NUTRITION

Section A Exam Oriented Questions Answer From Darpan

1. Write the need of macromolecules.



[View Text Solution](#)

2. Which matters can be studied in mineral nutrition?

 [View Text Solution](#)

3. Mention the methods to study the mineral requirements in plants.

 [View Text Solution](#)

4. Give information about essential mineral elements for plants and Give criteria for essentially.

 [View Text Solution](#)

5. Explain type of mineral elements with examples.



[View Text Solution](#)

6. Describe essential minerals on the basis of their diverse functions.



[View Text Solution](#)

7. Clarify the role of essential mineral elements (Role of macro and Micro nutrients).



[View Text Solution](#)

8. Mention various forms and functions of essential mineral nutrients.

 [View Text Solution](#)

9. Deficiency symptoms of Essential Elements.

 [View Text Solution](#)

10. Name the deficiency shown by plants and their causative elements.

 [View Text Solution](#)

11. Write effects of toxicity of Micronutrients.

 [View Text Solution](#)

12. How are minerals absorbed by plants?

 [View Text Solution](#)

13. Explain translocation of solutes.

 [View Text Solution](#)

14. Describe soil as reservoir of essential elements.

 [View Text Solution](#)

15. Describe nitrogen cycle.

 [View Text Solution](#)

16. Explain : Biological Nitrogen Fixation.

 [View Text Solution](#)

17. Which steps are associated with nodule formation?

 [View Text Solution](#)

18. Explain the process/mechanism of nitrogen fixation.

 [View Text Solution](#)

19. Explain Fate of Ammonia

 [View Text Solution](#)

Section B Give Differences

1. Micronutrients and Macronutrients.

 [View Text Solution](#)

2. Soil culture and Hydroponics.

 [View Text Solution](#)

3. Reductive Amination and Trans Amination.

 [View Text Solution](#)

Section B Give Scientific Reasons

1. Hydroponic method is most suitable for plant culture.

 [View Text Solution](#)

2. Soil is known as reservoir of minerals elements.

 [View Text Solution](#)

3. Leguminous plants are full of protein.

 [View Text Solution](#)

Section C Definition Explanation Terms Full Name

1. Definitions Mineral nutrition:

 [View Text Solution](#)

2. Definitions Essential mineral elements



[View Text Solution](#)

3. Definitions Macronutrient



[View Text Solution](#)

4. Definitions Micronutrient



[View Text Solution](#)

5. Definitions Mobilised elements



 [View Text Solution](#)

6. Definitions Immobilised elements

 [View Text Solution](#)

7. Definitions Chlorosis

 [View Text Solution](#)

8. Definitions Necrosis

 [View Text Solution](#)

9. Definitions Ammonification



[View Text Solution](#)

10. Definitions Nitrogen fixation



[View Text Solution](#)

11. Definitions Biological nitrogen fixation



[View Text Solution](#)

12. Definitions Root Nodules



[View Text Solution](#)

Section C Full Name

1. Full name N_2



[View Text Solution](#)

2. Full name NH_4^+



[View Text Solution](#)

3. Full name NH_2



[View Text Solution](#)

4. Full name *NADP*



[View Text Solution](#)

5. Full name *RuBisCO*



[View Text Solution](#)

Section D Textual Exercise

1. All elements that are present in a plant need not be essential to its survival' Comment.



[View Text Solution](#)

[View Text Solution](#)

2. Why is purification of water and nutrient salts so important in studies involving mineral nutrition using hydroponics?

 [View Text Solution](#)

3. Explain with examples: Macronutrients, Micronutrients, beneficial nutrients, toxic elements and essential elements.

 [View Text Solution](#)

4. Name at least five different deficiency symptoms in plants. Describe them and correlate them with the concerned mineral deficiency.



[View Text Solution](#)

5. If a plant shows a symptom which could develop due to deficiency of more than one nutrient, how would you find out experimentally, the real deficient mineral element.



[View Text Solution](#)

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



[View Text Solution](#)

7. What are the conditions necessary for fixation of atmospheric nitrogen by Rhizobium? What is their role in N_2 fixation?



[View Text Solution](#)

Section D Textual Exercis True Or False

1. Which of the following statements are true? If false correct them?

Every mineral element that is present in a cell is needed by the cell.



[View Text Solution](#)

2. Which of the following statements are true? If false correct them?

Nitrogen as a nutrient element, is highly immobile in the plants.



[View Text Solution](#)

Section E Solution Of Ncert Exemplar Multiple Choice Questions

1. Which one of the following roles is not characteristic of an essential element?

- A. being a component of biomolecules
- B. changing the chemistry of soil
- C. being a structural component of energy related chemical
- D. activation or inhibition of enzymes

Answer:



[View Text Solution](#)

2. Which one of the following statements can best explain the term critical concentration of an essential element?

A. essential element concentration below which plant growth is retarded

B. essential element concentration below which plant growth becomes enhanced

C. essential element concentration below which plant remains in the vegetative phase

D. none of the above

Answer:

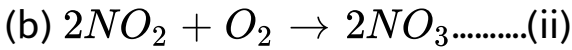
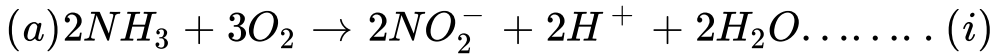


3. Which of the following symptoms is not due to manganese toxicity in plants

- A. calcium translocation in shoot apex is inhibited
- B. Deficiency in both iron and Nitrogen is induced
- C. Appearance of brown spot surrounded by chlorotic veins
- D. none of the above

Answer:

4. Reaction carried out by N_2 fixing microbes include.



Which of the following statements about these equations is not true?

A. Step (i) is carried out by Nitrosomonas or

Nitrococcus

B. Step (ii) is carried out by Nitrobacter

C. Both steps (i) and (ii) can be called nitrification

D. Bacteria carrying out these steps are usually

photoautotrophs

Answer:

5. With regard to the biological nitrogen fixation by Rhizobium in association with soyabean, which one of the following statement/ statements does not hold true.

- A. Nitrogenase may require oxygen for its functioning
- B. Nitrogenase is Mo-Fe protein
- C. Leg-haemoglobin is a pink coloured pigment
- D. Nitrogenase helps to convert N_2 gas into two molecules of ammonia

Answer:

6. Match the elements with its associated functions/roles and choose the correct option among given below:



A. $a - I, b - iic - i iid - ive - v$

B. $a - ivb - Ic - i iid - i ie - v$

C. $a - i ib - i ic - i vd - ve - i$

D. $a - i ib - i ic - vd - Ie - iv$

Answer:



View Text Solution

7. Plants can be grown in

- A. soil with essential nutrients
- B. water with essential nutrients
- C. either water or soil with essential nutrients
- D. water or soil without essential nutrients

Answer:



[View Text Solution](#)

Section E Solution Of Ncert Exemplar Very Short Answer

1. Name a plant which accumulate silicon.



[View Text Solution](#)

2. Mycorrhiza is a mutualistic association, How do the organism involved in this association gain from each other.



[View Text Solution](#)

3. Nitrogen fixation is shown by prokaryotes and not eukaryotes. Comment.



[View Text Solution](#)

4. Carnivorous plants like Nepenthes and Venus fly trap have nutritional adaptations. Which nutrient do they especially obtain and from where?

 [View Text Solution](#)

5. Think of a plant which lacks chlorophyll. From where will it obtain nutrition? Give an example of such a type of plant?

 [View Text Solution](#)

6. Name an insectivorous angiosperm.

 [View Text Solution](#)

 [View Text Solution](#)

7. A farmer adds azotobacter culture to soil before sowing maize. Which mineral element is being replenished?

 [View Text Solution](#)

8. What type of conditions are created by leg-hemoglobin in the root nodule of a legume?

 [View Text Solution](#)

9. What is common to Nepenthes, Utricularia and Drosera with regard to mode of nutrition?

 [View Text Solution](#)

10. Plants with zinc deficiency show reduced biosynthesis is....

 [View Text Solution](#)

11. Yellowish edges appear in leaves deficient in...

 [View Text Solution](#)

12. Name the macronutrient which is a component of all organic compounds but is not obtained from soil.

 [View Text Solution](#)

13. Name one non-symbiotic nitrogen fixing prokaryote.

 [View Text Solution](#)

14. Rice fields produce an important green house gas.
Name it.

 [View Text Solution](#)

15. Complete the equation for the reductive amination.



 [View Text Solution](#)

16. Excess of Mn in soil leads to deficiency of Ca, Mg and Fe. Justify.

 [View Text Solution](#)

Section E Solution Of Ncert Exemplar Short Answer Type Questions

1. How is sulphur important for plants Name the amino acids in which it is present.

 [View Text Solution](#)

2. How are organisms like pseudomonas and Thiobacillus of great significance in nitrogen cycle?

 [View Text Solution](#)

3. Carefully observed the following figure.



(a) Name the technique shown in the figure and the scientist who demonstrated this technique for the first

time.

(b) Name atleast three plants for which this technique can be employed for their commercial production.

(c) What is the significance of aerating tube and feeding funnel in this setup?



[View Text Solution](#)

4. Name the most crucial enzyme found in root nodules for N_2 - fixation? Does it require a special pink coloured pigment for its functioning? Elaborate.



[View Text Solution](#)

5. How are the terms critical concentration and deficient different from each other in terms of concentration of an essential element in plants? Can you find the values of critical concentration and deficient for minerals - Fe and Zn?



[View Text Solution](#)

6. Carnivorous plants exhibit nutritional adaptation. Citing an example explain this fact.



[View Text Solution](#)

7. A farmer adds/supplies Na, Ca, Mg and Fe regularly to his field and yet he observes that the plants show deficiency of Ca, Mg and Fe. Give a valid reason and suggest a way to help the farmer improve the growth of plants.



[View Text Solution](#)

Section E Solution Of Ncert Exemplar Long Answer Type Questions

1. It is observed that deficiency of a particular element showed its symptoms initially in older leaves and then in younger leaves.

(a) Does it indicate that the element is actively mobilized or relatively immobile?

(b) Name two elements which are highly mobile and two which are relatively immobile.

(c) How is the aspect of mobility of elements important to horticulture and agriculture.



[View Text Solution](#)

2. We find that Rhizobium forms nodules on the roots of leguminous plants. Also Frankia another microbe forms nitrogen fixing nodules on the roots of non-leguminous plant Alnus.

(a) can we artificially induce the property of nitrogen fixation in a plant, leguminous or non leguminous

(b) What kind of relationship is observed between mycorrhiza and pine trees?

(c) Is it necessary for a microbe to be in close association with a plant to provide mineral nutrition.

Explain with the help of one example.

 [View Text Solution](#)

3. With the help of examples describe the classification of essential elements based on the function they perform.

 [View Text Solution](#)

4. We know that plants require nutrients ,If we supply these in excess, will it be beneficial to the plants? IF yes how/If no why?



[View Text Solution](#)

5. Trace the events starting from the coming in contact of Rhizobium to a leguminous root till nodule formation. Add a note importance of leghemoglobin.



[View Text Solution](#)

6. Hydroponics have been shown to be a successful technique for growing of plants. Yet most of the crops

are still grown on land . Why?



[View Text Solution](#)

Questions For Module Important Mcq For Neet

1. Which enzyme is essential for the formation of nitrogen?

A. Nitrogenase

B. Nitrate reductase

C. Transferase

D. Transaminase

Answer:



[View Text Solution](#)

2. boron is present in green plants for

- A. Transport of sugar
- B. For activation of enzymes
- C. As cofactor of enzymes
- D. for photosynthesis

Answer:



[View Text Solution](#)

3. Why is Manganese essential?

- A. for the formation of cellwall
- B. Photolysis of H_2O during photosynthesis
- C. for the synthesis of chlorophyll
- D. for the synthesis of nucleic acid

Answer:



View Text Solution

4. What is the function of leghaemoglobin in root nodules of leguminosae?

- A. Inhibits activation of nitrogenase
- B. Removes O_2

C. Differentiation of root nodules

D. nif gene is expressed

Answer:



View Text Solution