



## HEAD OFFICE

208, CD, LOCAL SHOPPING CENTER  
AGGARWAL SHOPPING PLAZA,

## BRANCH -1

AYODHYA CHOWK SEC -3  
ROHINI

## BRANCH -2

DC CHOWK SEC- 9, ROHINI

9<sup>TH</sup> & 10<sup>TH</sup> MATHS / SCIENCE  
11<sup>TH</sup> & 12<sup>TH</sup> – PHYSICS / CHEMISTRY / MATHS / BIOLOGY  
EXCLUSIVE BATCH FOR NEET / JEE ASPIRANTS  
Ph no. 9696 500 500 / 9696 400 400

## Ch- 12(Mineral Nutrition)

1. Name two macronutrients that plants take from air.

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2. Why are the elements C, H, O and N called structural elements?

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

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4. Which element is required by plants in the greatest amount?

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5. What happens to iron in electron transport?

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6. Which component of electron transport contains both iron and sulphur?

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7. What are ion-channels?

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8. Why are majority of plant nutrient elements called mineral nutrients?

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9. Name the element which is a limiting nutrient for both natural and agricultural ecosystems.

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10. What is meant by nitrogen fixation?

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11. How are organisms like Pseudomonas and Thiobacillus of great significance in nitrogen cycle?

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

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13. Name an anaerobic nitrogen-fixing bacterium.

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14. Name one non- symbiotic nitrogen-fixing prokaryote.

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

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**2 marks**

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

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17. What is hydroponics? Give one application of this technique.

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

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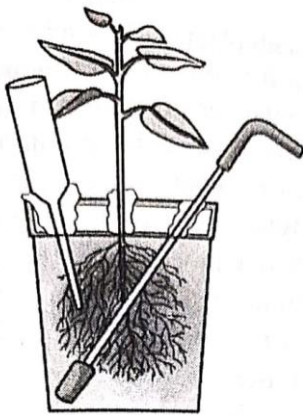
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19. If a plant shows a symptom which would develop due to deficiency of more than element, how would you find out experimentally, the real deficient mineral element?  
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20. (a) Why are symptoms of nitrogen deficiency related to molybdenum deficiency?  
(b) Mention two symptoms of nitrogen deficiency in plants.  
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21. How are amides formed? Name two important amides found in plants.  
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**3 marks**

22.



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

(b) Name at least 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 set-up?  
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22. All elements that are present in a plant need not be essential to its survival. Comment.

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

(i) **Sulphur**: Any one amino acid in which it is present, effect of deficiency on flowering.

(ii) **Manganese**: Chemical form in which absorbed from the soil, the best defined function in photosynthesis.

(iii) **Calcium**: Two Roles during cell division.

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24. How are the minerals absorbed by the plants?

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25. What is meant by flux? Describe its two kinds.

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26. Describe transpiration.

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(a) Mention the three criteria of essentiality of elements.

(b) What are deficiency symptoms?

(c) What moral value do you understand from this concept?

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34. Micronutrients are required in very low quantities; there is a very narrow range of their optimum concentration, above which they become toxic and below which they show deficiency symptoms.

(a) Toxicity of manganese may be manifested as deficiency symptoms of iron, calcium and magnesium. Justify.

(b) Mention the value indicated by this.

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