# BIOLOGY

# BOOKS - MODERN PUBLISHERS BIOLOGY (HINGLISH)

# MINERAL NUTRITION

## Practice Problems Minerals And Nitrogen Nutrition

**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.** Which element is used by plants 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 magnesium in plants?

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

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**10.** What is chlorosis?

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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.** Mention one role of iron in plants

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

(i) excess of sulphur.

(ii) low content of nitrogen.

(iii) excess of nitrogen.

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## Ncert File Ncert Exercise Questions

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

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

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**3.** Explain with examples: macronutrients, micronutrients, beneficial nutrients, toxic elements and essential elements.

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

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**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?

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**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?

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**7.** How are the minerals absorbed by the plants?

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**8.** What are the conditions necessary for fixation of atmospheric nitrogen by Rhizobium. What is their role in $N_2$ -fixation?

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**9.** What are the steps involved in formation of a root nodule?

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## Ncert File Ncert Exercise Questions True And False

**1.** (a) Boron deficiency leads to stout axis. following statements are true? If false correct them:

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**2.** Every mineral element that is present in a cell is needed by the cell. following statements are true? If false correct them:

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**3.** Nitrogen as a nutrient element is highly immobile in plants. following statements are true? If false correct them:

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**4.** (d) It is very easy to establish the essentiality of micronutrients because they are required only in trace quantities. following statements are true? If false correct them:

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## Ncert File Ncert Exemplar Problems A 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 compounds

D. activation or inhibition of enzymes

**Answer: B**

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**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 stunted.

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

D. none of the above.

**Answer: A**

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**3.** Deficiency symptoms of an element tend to appear first in young leaves. It indicates that the element is relatively immobile. Which one of the following elemental deficiency would show such symptoms?

A. sulphur

B. magnesium

C. nitrogen

D. potassium

**Answer: A**

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**4.** Which one 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: B**

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**5.** Reaction carried out by $N_2$ fixing microbes include

$2NH_3 + 3O_2 \rightarrow 2NO_2^- + 2H^+ + 2H_2O$ ...(i)

$2NO_2^- + O_2 \rightarrow 2NO_3^-$ ....(ii) 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 htese steps are usually photoautotrophs

**Answer: A**

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**6.** With regard to the bilogical nitrogen fixation by Rhizobium in association with soy bean, 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-hemoglobin is a pink coloured pigmenton

D. Nitrogenase helps to convert $N_2$ gas into two molecules of ammonia.

**Answer: A**

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**7.** Match the element with its associated functions/roles and choose the correct option among given below:

Options

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

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

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

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

**Answer: B**

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**8.** Plants can be grown in (Tick the incorrect option)

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: C**

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## Ncert File Ncert Exemplar Problems B Very Short Answer Type Questions

**1.** Name a plant, which accumulate silicon.

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**2.** Mycorrhiza is a mutualistic association. How do the organisms involved in this association gain from each other ?

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

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**4.** Carnivorous plants like Nepenthes and venus fly trap have nutritional adaptations. Which nutrient to

they especially obtain and from where ?

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

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**6.** An insectivorous plant is

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**7.** A farmer adds Azotobacter culture to soil before sowing maize. Which mineral element will be replenished by doing so?

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**8.** What type of condition is created by leghaemoglobin in root nodules of a legume?

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

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**10.** Plants with zinc deficiency show reduced biosynthesis of

Watch Video Solution

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

Watch Video Solution

**12.** A macronutrient which is component of all organic compounds but is not obtained from soil is

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**13.** Name one non-symbiotic nitrogen fixing prokaryote.

Watch Video Solution

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

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**15.** Complete the equation for reductive amination ..... .

$$+NH_4^+ + NADPH \xrightarrow{?} \text{glutamate} + H_2O + NADP$$

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

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## Ncert File Ncert Exemplar Problems C Short Answer Type Questions

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

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

Watch Video Solution

**3.** Carefully observe 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?

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**4.** Name the most crucial enzyme found in root nodules for N2 fixation ? Does it require a special pink coloured pigment for its functioning ? Elaborate.

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**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 ?

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

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**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.

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## Ncert File Ncert Exemplar Problems D 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 mobilised 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 angriculture ?

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**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.

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**3.** What are essential elements for plants ? Give the criteria of essentiality ? How are minerals classifieds depending upon the amount in which they are needed by the plants ?

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

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**5.** 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 ?

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**6.** Trace the events starting from the coming in contact of Rhizobium to a leguminous root till nodule formation. Add a note on importance of leg haemoglobin.

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**7.** Give the biochemical events occurring in the root nodule of a pulse plant. What is the end product? What is its fate ?

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**8.** Hydroponics have been shown to be a successful technique for growing of plants. Yet most of the crops are still grown on land . Why ?

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## Hots Higher Order Thinking Skills Brain Twisting Questions With Answers Very Short Answer Questions

**1.** Define nutrition.

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**2.** Name one aerobic and one anaerobic nitrogen fixing bacteria.

Watch Video Solution

**3.** Which symbiotic nitrogen-fixing cyanobacterium lives in association with Azolla.

Watch Video Solution

**4.** Write one symptom of calcium deficiency?

Watch Video Solution

**5.** Mention one utilization of zinc.

Watch Video Solution

**6.** What is nitrogen fixation?

Watch Video Solution

## Hots Higher Order Thinking Skills Brain Twisting Questions With Answers Short Answer Questions

**1.** What is necrosis?

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**2.** What is the function of leghaemoglobin ?

Watch Video Solution

**3.** What do you mean by necrosis ?

Watch Video Solution

**4.** Define active absorption of minerals.

Watch Video Solution

**5.** What are immobile mineral elements ? Name them.

Watch Video Solution

**6.** Write one role of calcium in plants

Watch Video Solution

**7.** Write two difference between passive and active absorption.

Watch Video Solution

**8.** How are the minerals absorbed by the plants?

Watch Video Solution

**9.** What are essential elements for plants.

Watch Video Solution

**10.** What is nitrification ?

Watch Video Solution

**11.** How do plants obtain iron from soil?

Watch Video Solution

**12.** Mention one role of magnesium in plants

Watch Video Solution

**13.** What are essential elements?

Watch Video Solution

## Hots Higher Order Thinking Skills Brain Twisting Questions With Answers Long Answer Questions

**1.** What is denitrification?

Watch Video Solution

**2.** How is zinc absorbed from soil by plants?

Watch Video Solution

**3.** What do you mean by Hydroponics?

Watch Video Solution

**4.** Mention one role of boron in plants

Watch Video Solution

**5.** What is critical concentration?

Watch Video Solution

## Quick Memory Test A True Or False

**1.** What is etiolation?

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**2.** In which form molybdenum is absorbed in plants?

Watch Video Solution

**3.** Boron is related to synthesis of plant auxins.

Watch Video Solution

**4.** Write one role of manganese

Watch Video Solution

**5.** Define Chlorosis

Watch Video Solution

**6.** What is Ammonification?

Watch Video Solution

**7.** Mention one role of zinc

Watch Video Solution

**8.** Why magnesium is important for plants?

Watch Video Solution

**9.** Decreased availability of boron results in appearance of necrotic spots.

Watch Video Solution

**10.** How is sulphur absorbed in plants?

Watch Video Solution

**11.** Chlorosis is caused by the deficiency of calcium.

Watch Video Solution

**12.** Chlorosis occurs due to the deficiency of.....

Watch Video Solution

## Quick Memory Test B Complete The Missing Links

**1.** Mention one role of magnesium

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

Watch Video Solution

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

Watch Video Solution

**4.** What is Necrosis?

Watch Video Solution

**5.** Drought spot of apples is caused by the deficiency of .....

Watch Video Solution

**6.** The technique of culturing plants in nutrient solutions is known as .....

Watch Video Solution

**7.** Abbreviation NPK means .....

Watch Video Solution

**8.** The conversion of ammonia to nitrates is called .....

Watch Video Solution

**9.** What is Balanced nutrient solution?

Watch Video Solution

**10.** Sundew is an ..... plant.

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

## Quick Memory Test C Choose The Correct Alternative

**1.** Mention one role of calcium

Watch Video Solution

**2.** Magnesium/Manganese is the major component of ring structure of chlorophyll.

Watch Video Solution

**3.** Copper/Boron is essential in transportation of carbohydrate through phloem tissues.

Watch Video Solution

**4.** Phenomenon which leads to death of tissues is called necrosis/chlorosis.

Watch Video Solution

**5.** Explain the following: (i) Macronutrients

Watch Video Solution

**6.** Azotobacter/Anabena is free living bacteria.

Watch Video Solution

**7.** During transamination transfer of amino group of one amino acid to ketogroup of another keto acid takes place.

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## Revision Exercises Very Short Answer Questions

**1.** Give one function of Rhizobium.

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**2.** HYDROPONICS

Watch Video Solution

**3.** Name the enzyme responsible for nitrite reduction.

Watch Video Solution

**4.** Expand NAD.

Watch Video Solution

**5.** From where do plants obtain hydrogen ?

Watch Video Solution

**6.** Which are the two macronutrients that usually play the most important role in limiting plant growth globally?

Watch Video Solution

**7.** What are chelators?

Watch Video Solution

**8.** Name the principal mineral anion in extracellular fluid.

Watch Video Solution

Watch Video Solution

**9.** Pick out from the following list the two minerals which are not needed by the majority of plants but very much needed by almost all animals : Calcium, Sodium, Potassium, Iron, Iodine.

Watch Video Solution

**10.** What protects nitrogenase?

Watch Video Solution

**11.** Give one physiological role of nickel

Watch Video Solution

**12.** Name two plant parts where nickel is present

Watch Video Solution

**13.** How is molybdenum absorbed by plants?

Watch Video Solution

## Revision Exercises Short Answer Questions

**1.** Bring out similarity and difference between leghaemoglobin and haemoglobin.

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**2.** What is the role of nitrogen in plants?

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**3.** Name two free living micro-organisms which can fix nitrogen.

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**4.** How the presence of magnesium fulfils the requirements of essentiality of elements from growth and development of a plant?

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**5.** Why do plants of the legume family usually contain more protein than other plants?

Watch Video Solution

**6.** What is nitrification?

Watch Video Solution

**7.** A farmer adds Azotobacter culture to the soil before sowing maize. How does it increase the yield of maize?

Watch Video Solution

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

Watch Video Solution

**9.** Write explanatory notes on biological nitrogen fixation.

Watch Video Solution

**10.** Mention one role of nitrogen in plants

Watch Video Solution

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

Watch Video Solution

Watch Video Solution

**12.** Name the respective mineral nutrient element of plants that

(i) Is needed in the synthesis of auxins

(ii) is a constituent of ferredoxin

(iii) Forms the core constituent of the ring structure of chlorophyll

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**13.** In what form do plants absorb Phosphorus or Boron or Magnesium from the soil?

Watch Video Solution

**14.** What is transamination?

Watch Video Solution

**15.** Write one role of manganese

Watch Video Solution

**16.** How is potassium useful for plants?

Watch Video Solution

**17.** How is phosphorous absorbed from soil?

Watch Video Solution

**18.** In what form is magnesium absorbed by plants from soil? Give two functions of magnesium in plants

Watch Video Solution

**19.** What is ammonification?

Watch Video Solution

**20.** Write two uses of phosphorus in plants.

Watch Video Solution

**21.** Write two uses of magnesium in plants

Watch Video Solution

**22.** What are the criteria of essentiality of an element?

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## Revision Exercises Long Answer Questions

**1.** Explain the following:

(a) Micronutrients

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**2.** Differentiate between the following:

(a) Micronutrients and macronutrients

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**3.** What are the deficiency symptom of molybdenum in plants?

Watch Video Solution

**4.** What is chlorosis and necrosis?

Watch Video Solution

**5.** Mention the role of magnesium in plants

Watch Video Solution

# Competition File Objective Type Questions A Multiple Choice Questions Mcq S

**1.** Write the source of iron in plants

A.

B.

C.

D.

**Answer:**

Watch Video Solution

**2.** About 98 percent of the mass of every living organisms is composed of just six elements including carbon, hydrogen, nitrogen, oxygen and

A. Sulphur and magnesium

B. Magnesium and sodium

C. Calcium and phosphorus

D. Phosphorus and sulphur

**Answer: D**

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**3.** Which of the following is a macronutrient?

A. Mo

B. Ca

C. Zn

D. Mn

**Answer: B**

Watch Video Solution

**4.** 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 three elements shall affect the most, both photosynthetic and mitochondrial electron transport ?

A. Cu, Mn, Fe

B. Co, Ni, Mo

C. Mn, Co, Ca

D. Ca, K, Na

**Answer: A**

 Watch Video Solution

**5.** What is hydroponics?

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**6.** Zn, Mo, Fe, Cu are

A. Trace element

B. Non-essential

C. Macro-nutrient

D. None of these

**Answer: A**

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**7.** The non-symbiotic $N_2$ fixer is

A. Anabaena

B. Rhizobium

C. Azotobactor

D. azolla

**Answer: C**

Watch Video Solution

**8.** An example of phosphate solubilizing symbiotic association is:

A. Azolla

B. Rhizobium

C. Pseudomonas

D. Mycorrhiza

**Answer: D**

Watch Video Solution

**9.** During nitrification, which bacteria converts ammonia to nitrate

A. Nitrobacter

B. Pseudomonas

C. Nitrosomonas

D. Mycobacterium

**Answer: C**

Watch Video Solution

**10.** The deficiency of which elements causes chlorosis?

Watch Video Solution

**11.** An example of free living nitrogen fixing aerobic bacteria is :

A. Clostridium

B. Rhizobium

C. Azotobacter

D. Frankia

**Answer: C**

Watch Video Solution

**12.** Molybdenum is the essential constituent of:

A. Nitrogenase

B. Respiratory chain

C. Growth regulators

D. Chlorophyll

**Answer: A**

Watch Video Solution

**13.** Which of the following mineral nutrients plays an important role in biological nitrogen fixation?

A. Zinc

B. Iron

C. Molybdenum

D. Magnesium

**Answer: C**

Watch Video Solution

**14.** Which of the following is not an essential element?

A. Iron

B. Manganese

C. Zinc

D. Iodine

**Answer: D**

Watch Video Solution

**15.** Insectivorous plants are usually adapted to:

A. Water rich soil

B. Soil deficient in sugars

C. Soil rich in trace elements

D. Soil deficient in nitrogenous compounds

**Answer: D**


**16.** Manganese is required in

A. Nucleic acid synthesis

B. Plant cell wall formation

C. Photolysis of water during photosynthesis

D. Chlorophyll synthesis

**Answer: C**

Watch Video Solution

**17.** Which of the following is not non-essential element for plants?

A. Aluminium

B. Copper

C. Iron

D. Zinc

**Answer: A**

Watch Video Solution

**18.** Sulphur is not a constitunet of

A. Cysteine

B. Methionine

C. Ferredoxin

D. Pyridoxine

**Answer: C**

Watch Video Solution

**19.** Function of leghemoglobin (a red pigment) in root nodules of leguminous plants is

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: A**

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**20.** Which one of the following is a micronutrient in plants?

A. Magnesium

B. Zinc

C. Potassium

D. Calcium

**Answer: B**

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**21.** Hydroponics is the method of

A. Water conservation

B. Plant development in water without soil

C. Plant development without soil

D. Plant development in saline soil

**Answer: B**

Watch Video Solution

**22.** Micronutrients are

A. Mn, Ni, Zn

B. O, Cu, Bo

C. Mg, Mn, Mo

D. Ca, S, Fe

**Answer: A**

Watch Video Solution

**23.** Dentrification is carried out by

A. Pseudomonas

B. Nitrobacter

C. Nitrosomonas

D. Nitrococcus

**Answer: A**

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**24.** For its action, nitrogenase requires

A. High input of energy

B. Light

C. $Mn^{2+}$

D. Super oxygen radicals.

**Answer: A**

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**25.** A few normal seedlings of tomato were kept in a dark room. After few days, they were found to have become white-coloured like albinos. Which of the following terms will you use to describe them ?

A. Mutated

B. Embolised

C. Etiolated

D. Defoliated.

**Answer: C**

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**26.** Deficiency symptoms of nitrogen and potassium are visible first in

A. Senescent leaves

B. Young leaves

C. Roots

D. Buds.

**Answer: A**

 Watch Video Solution

**27.** During anaerobic respiration the conversion of pyruvate into acetaldehyde, along with co-enzyme TPP, the cofactor required is

A. $Mg^{++}$

B. $Mn^{++}$

C. $Fe^{++}$

D. $Zn^{++}$

**Answer: A**

Watch Video Solution

**28.** The microbe Pseudomonas denitrificans produces Vitamin

A. K

B. D

C. $B_2$

D. $B_{12}$

**Answer: D**

Watch Video Solution

**29.** Which one of the following is not a micronutrient for plants ?

A. Magensium

B. Molybdenum

C. Boron

D. Zinc

**Answer: A**

Watch Video Solution

**30.** Which is essential for the growth of root tip ?

A. Ca

B. Mn

C. Zn

D. Fe

**Answer: A**

Watch Video Solution

**31.** Identify the wrong statement in context of heartwood

A. It is highly durable

B. It conducts water and minerals efficiently

C. It comprises dead elements with highly lignified walls

D. Organic compounds are deposited in it

**Answer: B**

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**32.** Which of the following elements is responible for maintaining turgor in cells

A. Sodium

B. Potassium

C. Magnesium

D. Calcium

**Answer: B**

Watch Video Solution

**33.** In which of the following forms is iron absorbed by plants

A. Ferrous

B. Free element

C. Ferric

D. Both ferric and ferrous

**Answer: C**

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## Competition File Objective Type Questions B Matching Type Questions

**1.** Match the term in Column A with suitable terms in column B :

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## Competition File Objective Type Questions C Assertion Type Questions

**1.** Write two role of manganese

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**2.** What is nitrification?

Watch Video Solution

**3.** Which microbes are involved in Ammonification?

Watch Video Solution

**4.** Mention one role of magnesium

Watch Video Solution

**5.** Write one role of zinc in plants

Watch Video Solution

**6.** Which mineral element is present in Ferrodoxin?

Watch Video Solution

**7.** Assertion. Calcium deficiency symptoms first appear in the apical region.

Reason. Calcium is highly mobile in plants

A. If both Assertion and Reason are true and Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but Reason is false.

D. If both Assertion and Reason are false.

**Answer: B**

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**8.** Assertion. Copper is a trace elements.

Reason. Because we can trace in movement inside the plants.

A. If both Assertion and Reason are true and Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the

Assertion.

C. If Assertion is true but Reason is false.

D. If both Assertion and Reason are false.

**Answer: C**

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**9.** What is critical concentration?

Watch Video Solution

**10.** Which bacteria are involved in nitrogen fixation?

Watch Video Solution

**11.** What is denitrification?

Watch Video Solution

**12.** What are essential elements?

Watch Video Solution

**13.** Assertion : If you burn a plant , its nitrogen component is given off as ammonia and other gases .

Reason : Hydroponics does not allow plants to grow

well if they are supplied with all the mineral nutrients they need.

A. If both Assertion and Reason are true and Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but Reason is false.

D. If both Assertion and Reason are false.

**Answer: C**

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**14.** Name one cyanobacteria that fixes nitrogen

Watch Video Solution

**15.** Write one role of iron in plants

Watch Video Solution

## Competition File Objective Type Questions D Reasoning Type Questions

**1.** Name one symbiotic nitrogen fixing bacteria

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**2.** Which element is essential for nitrogen fixation?

Watch Video Solution

**3.** Magnesium deficiency in plants leads to chlorosis in leaves.

Watch Video Solution

**4.** What is Ammonification?

Watch Video Solution

**5.** Define Etiolation

Watch Video Solution

**6.** What is critical concentration?

Watch Video Solution

**7.** Nickel is involved in metabolism of urea

Watch Video Solution

**8.** Write one role of potassium in plant body

Watch Video Solution

**9.** In which form manganese is absorbed by the plant?

Watch Video Solution

## Competition File Objective Type Questions E Additional Multiple Choice Questions

**1.** Gray spots of oat are caused by the deficiency of

A. Cu

B. Zn

C. Mn

D. Fe

**Answer: C**

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**2.** Hydroponics is

A. Water

B. Solution containing all the nutrients

C. Green house

D. Liquid

**Answer: B**

Watch Video Solution

**3.** The major portion of the dry weight of plants comprised of

A. Calcium, magnesium and sulphur

B. Carbon, nitrogen and hydrogen

C. Carbon, hydrogen and oxygen

D. Nitrogen, phosphorus and potassium

**Answer: C**

 Watch Video Solution

**4.** Boron in green plants assists in

A. Acting as enzyme cofactor

B. Photosynthesis

C. Sugar transport

D. Activation of enzymes

**Answer: C**

 Watch Video Solution

**5.** If by radiation all nitrogenase enzymes are inactivated, then there will be no

A. Fixation of nitrogen in legumes

B. Conversion of nitrate to nitrite

C. Fixation of atmospheric nitrogen

D. Conversion of ammonium to nitrate

**Answer: A**

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**6.** The most abundant element present in the plants is

Or

Which of the following is not absorbed through soil

A. Nitrogen

B. Manganese

C. Iron

D. Carbon

**Answer: D**

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**7.** Passive obsorption of minerals salts is not dependent on

A. Osmosis

B. Diffusion

C. Donnan equilibrium

D. Ion exchange

**Answer: A**

Watch Video Solution

**8.** Middle lamella mainly contains

A. Ca

B. Mg

C. Na

D. K

**Answer: A**

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**9.** The appearance of yellow edges to leaves is due to deficiency of this mineral element

A. Calcium

B. Magnesium

C. Potassium

D. Sulphur

**Answer: C**

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**10.** The macronutrient 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: B**

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**11.** Which is essential for root hair growth

Or

The mineral present in cell wall is

A. Zn

B. Ca

C. Mo

D. S

**Answer: B**

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**12.** Prolonged liberal irrigation of agricultural fields is likely to create the problem of

A. Acidity

B. Aridity

C. Salinity

D. Metal toxicity

**Answer: C**

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**13.** 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 three elements shall affect the most, both photosynthetic and mitochondrial electron transport ?

A. Cu, Mn, Fe

B. Co, Ni, Mo

C. Mn, Co, Ca

D. Ca, K, Na

**Answer: A**

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**14.** The ability of the venus fly trap of capture insects is due to

A. Chemical stimulation by the prey

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

C. Specialized "muscle like" cells

D. Rapid turgor pressure changes.

**Answer: D**

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**15.** What is Balanced Nutrient Solution?

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**16.** The nuber of essential elements required for normal growth of plant is

A. 10

B. 16

C. 20

D. 25

**Answer: A**

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**17.** Name the element that plays an important role in biological nitrogen fixation :

A. Molybdenum

B. Manganese

C. Copper

D. Zinc

**Answer: A**

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**18.** Conversion of ammonia into nitrates through Nitrosomonas is called :

A. Nitrogen fixation

B. Nitrification

C. Denitrification

D. Ammonification

**Answer: B**

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**19.** Bacteria which reduce nitrates in soil to nitrogen are:

A. Nitrosomonas

B. Pseudomonas

C. Rhizobium

D. Clostridium

**Answer: B**

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**20.** Which of the following is a flowering plant with nidules containing filamentous nitrogen-fixing

microorganism

A. Crotalaria juncea

B. Cycas revoluta

C. Cicer arietinum

D. Casuarina equisetifolia

**Answer: D**

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Chapter Practice Test

**1.** What is the name of relationship where two organisms live in close physical association and share mutual benefits?

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**2.** What is influx of ions?

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**3.** What is ammonification?

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**4.** What is denitrification?

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**5.** What is water culture or solution culture ?

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**6.** Write two criteria for essentiality of an element for plants.

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**7.** Mycorrhiza is a mutualistic association. How do the organisms involved in this association gain from each other ?

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**8.** How is sulphur important for plants ?

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**9.** What is chlorosis ?

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**10.** What is denitrification?

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

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**12.** What role does copper play in maintaining life of a plant?

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**13.** What is efflux?

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**14.** BIOLOGICAL NITROGEN FIXATION

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**15.** Write the role of Nickel in plants

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**16.** Write about source, functions of potassium.

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