# BIOLOGY

## BOOKS - ARIHANT NEET BIOLOGY (HINGLISH)

## MINERAL NUTRITION

### Check Point 19 1

**1.** Role of all mineral nurtients in plant growth metabolism was described by

A. Knop

B. Arnon and hoagland

C. De sassure

D. Steward

**Answer: B**

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**2.** In plants nutrition mineral elements are called macro or microelements depending upon their

A. relative presence in plant sap

B. relative importance in plant growth

C. relative amount required in plants

D. relarive availability

**Answer: C**

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**3.** Macronutrients are elements that

A. play major role in plant nutrition

B. are required in large quantities in plants

C. form large molecules in plants

D. none of the above

**Answer: B**

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**4.** Complete fertilisers include

A. N, P and K

B. Ca, Mg and K

C. N, Ca and Mg

D. None of these

**Answer: A**

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**5.** Micronutrients are

A. less important than macronutrients but are present in large amount in plant

B. as important as macronutrients but are present in trace amount in plant

C. having a minor role in plant nutrition

D. emitted from culture medium without any detrimental effect

**Answer: B**

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**6.** The major role of minor element inside living organisms is to act as:

A. binder of cell structure

B. constituents of hormones

C. building blocks of important amino acids

D. cofactor of enzymes

**Answer: D**

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**7.** Plants need one of the following for ATP and meristematic tissue formation.

A. P,N

B. N,Cu

C. N,Ca

D. K

**Answer: A**

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**8.** Sulphur is absorbed by plants as

A. $SO_3$ from soil

B. $SO_2$ from air

C. $SO_4^{2-}$

D. Both (b) and ©

**Answer: D**

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**9.** Which of the following is the only monovalent cation essential for plant growth ?

A. Zn

B. Mn

C. K

D. Mg

**Answer: C**

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**10.** Gray spots of oat are caused due to deficiency of

A. Cu

B. Zn

C. Mn

D. Fe

**Answer: C**

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**11.** Deficiency of molybdenum causes

A. wilting of plant

B. increase in growth of plant

C. mottled chlorosis

D. mottling and necrosis plant

**Answer: A**

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**12.** Boron in green plants assists in

A. activation of enzymes

B. acting an enzyme cofactor

C. photosynthesis

D. sugar transport

**Answer: D**

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**13.** Nodulation of legumes is reduced in deficency of

A. sulphur and potassium

B. sulphur and boron

C. manganese and coppe

D. calcium and potassium

**Answer: C**

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**14.** Which one is essential mineral, not constituent of any enzyme but stimulates the activity of many enzymes?

A. Zn

B. N,Cu

C. K

D. Mg

**Answer: A**

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**15.** Plants deficient of element zinc, show its effect on the biosynthesis of plant growth hormone

A. cytokinin

B. auxin

C. ethylene

D. abscisic acid

**Answer: B**

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**16.** Toxicity of Mn in plant may cause deficiency of . . . In plants,

A. Fe and Mg

B. S, P and K

C. Ca, Cl and Mg

D. N, P and Mn

**Answer: B**

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**17.** Minerals are absorbed in the form of

A. Molecules

B. ions

C. compounds

D. mixtures

**Answer: B**

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

A. diffusion

B. osmosis

C. donnam equilibrium

D. ionic exchange

**Answer: B**

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**19.** Contact exchange of ions occurs

A. between root and soil particles

B. root and soil solution

C. cell and external solution

D. all of the above

**Answer: A**

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**20.** Active absorption of mineral salts makes use of

A. ionic exchange

B. carriers

C. phosphorylation of elements

D. none of these

**Answer: B**

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## Check Point 19 2

**1.** Nitrogen-fixation refers to

A. conversion of soil nitrogen into atmospheric nitrogn $(N_2)$

B. converseion of atmospheric molcular nitrogen $(N_2)$ into easily absorbable forms

C. utilisation of nitrogen compounds in the soil by the plants

D. none of the above

**Answer: B**

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**2.** Abiological nitrogen fixation in industries occurs at

A. high temperature

B. low pressure

C. low temperature

D. both (b) and (c)

**Answer: A**

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**3.** During natural abiological nitrogen fixation, the end product is

A. nitrate

B. nitrite

C. ammoniia

D. nitric acid

**Answer: D**

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**4.** Nitrogen-fixation in the environment is done

A. mostly aniologically

B. mostly biologically

C. only abiologically

D. only biologically

**Answer: B**

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**5.** An aerobic saprotrophic nitrogen-fixing free-living bacteria is

A. Azospirillum

B. Azotobacter

C. Chromatium

D. Clostridium

**Answer: B**

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**6.** A nitrogen-fixing bacteria living in leaves of Rubiaceae and Mysinaceae is

A. Rhizobium

B. Basillus

C. Beijerinckia

D. Xanthomonas

**Answer: D**

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**7.** Most active free-living cyanobacteria in rice field for nitrogen-fixation is

A. Aulosira fertilissima

B. Cylindrospermum

C. Azotobacter

D. Frankia

**Answer: A**

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**8.** Nostoc develops symbiotic relationship with

A. Gunnera

B. virus

C. Anthoceros

D. Azolla

**Answer: A**

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**9.** Which one does not fix nitrogen?

A. Azotobacter

B. Spirogyra

C. Anabaena

D. Nostoc

**Answer: B**

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**10.** Nitrogenase enzyme is

A. sensitive to moleculer oxygen

B. only present in prokaryotes

C. present within the bacteroids

D. all of the above

**Answer: D**

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**11.** Activity of nitrogenase enzyme depends on

A. non-availability of ATP

B. availability of nitric acid

C. availability of ATP

D. non-availability of nitric acid

**Answer: C**

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**12.**

$$N_2 + 8e^- + 8H^+ + 16ATP \rightarrow 2NH_3 + H_2 + 16ADP + 16\text{Pi}$$

The above equation refers to

A. ammonification

B. nitrification

C. nitrogen-fixation

D. denitrification

**Answer: C**

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**13.** During ammonification,the gaseous $NH_{(3)}$ changes to its ionic form in the soil when pH is

A. highly acidic

B. highly basic

C. more than six

D. at seven only

**Answer: C**

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**14.** Some plants can store ammonium ions, even though they are highly toxic. These plants are

A. Begonia

B. Oxalis

C. Paddy

D. Both (a) and (b)

**Answer: D**

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**15.** Which of the following is a characteristic feature of nitrifying bacteria

A. oxidise ammonia to nitrate

B. convert protein into ammonia

C. convert free nitrogen to nitrogen compound

D. reduce nitrates to free nitrogen

**Answer: A**

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**16.** $2NH_3 + 3O_2 \xrightarrow{X} 2NO_2^- + 2H^+ + 2H_2O$

In the given equation 'X' is

A. Nitrobacter

B. Penicillium

C. Nitrosomonas

D. Nitrocystis

**Answer: C**

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**17.** The reduction of nitrite to ammonia during nitrate assimilation is carried out by

A. amino transferase and Mg

B. nitrogenase and Zn

C. nitrite reductase and Mn

D. nitrite reductase and ferrodoxin

**Answer: A**

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**18.** Reaction of a-ketoglutaric acid with ammonia to form glutamic acid is

A. oxidative amination

B. reductive amination

C. trans amination

D. ammonification

**Answer: D**

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**19.** Glutamine react with . . . . In the presence of glutamate synthetase to form two molecules of glutamate

A. $\alpha$-ketoglutarate

B. aspartate

C. oxalic acid

D. ammonia

**Answer: B**

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**20.** Denitrification process deplete important nutrients from the soil it also causes

A. acidification of soil

B. assimilation in the soil

C. neutralisation of soil

D. none of these

**Answer: A**

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## Chapter Exercises A Taking It Together Assorted Questions Of The Chapter For Advanced Level Practise

**1.** Critical elements are

A. N,P and S

B. N,S and K

C. N,P and K

D. P,K and S

**Answer: C**

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**2.** Which of the following group of elements cannot be said as essential elements ?

A. Sn,Na,Li and Be

B. C,H,O,N and P

C. Fe,Mo,Mn and B

D. Ca,Mg,p and K

**Answer: A**

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**3.** Which one of the following is a micronutrient ?

A. Manganese

B. Nitrogen

C. Magnesium

D. Calcium

**Answer: A**

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**4.** Which of the following is required in maximum amount ?

A. Nitrogen

B. Sulphur

C. Phosphorus

D. calcium

**Answer: A**

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**5.** phosphorus deficiency in plants

A. decreases apical dominance

B. bring healthy root growth

C. delay flowering

D. Premature leaf fall

**Answer: C**

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**6.** The major role of phosphorus in plant metabolism is

A. $O_2$ evolution during photosynthesis

B. $CO_2$ evolution during respiration

C. create anaerobic conditions

D. generate metabolic energy

**Answer: D**

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**7.** Premature leaf fall is due to deficiency of

A. phosphorus

B. calcium

C. iron

D. Both (a) and (b)

**Answer: A**

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**8.** Plants require sulphur for

A. ATP synthesis

B. protien synthesis

C. glucose synthesis

D. DNA replication

**Answer: B**

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**9.** A plant requires calcium for

A. development of root and stem

B. synthesising chlorophyll

C. DNA replication

D. opening and closing its stomata\

**Answer: A**

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**10.** Nutrient which is essential for the opening of stomata is

A. potassium

B. nitrogen

C. copper

D. iron

**Answer: A**

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**11.** Deficiency of iron causes

A. redused lraves and stunted growth

B. bending of leaf tip

C. interveinal chlorosis

D. decrease in protien synthesis

**Answer: C**

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**12.** Which one of the following elements plays a major role in nitrogen metabolism by activating the enzyme, nitrogenase ?

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**13.** Molybdenum is involved in plant metabolism in

A. translocation of solutes

B. nitrate reduction

C. tryptophan synthesis

D. ascorbic acid synthesis

**Answer: B**

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**14.** Zinc is an activator of

A. amino acid oxidase

B. tryptophan synthetase

C. succinic acid dehydrogenase

D. PEPCO

**Answer: C**

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**15.** Which one is incorrect combination ?

A. N - Amino acid

B. Fe - Cytochrome

C. Na - Protien

D. Mg - Chlorophyll

**Answer: C**

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**16.** Frankia is a

A. fungi

B. actinomycetes

C. cyanobacteria

D. alga

**Answer: B**

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**17.** Which of the following is non-symbiotic ?

A. Azotobacter

B. Nostoc

C. Rhizobium

D. None of this

**Answer: A**

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**18.** Nitrogen-fixing bacterium is

A. Frankia

B. Acetobacter

C. Mycoplasma

D. Chlamydia

**Answer: A**

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**19.** Nitrogen-fixing enzyme found in root nodules is

A. nitrogen esterase

B. nitrogenase

C. nitrace

D. Nitrosomonas

**Answer: B**

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**20.** What protects enzyme nitrogenase ?

A. Haemoglobin

B. Ferrodoxin

C. Leghaemoglobin

D. Phytochrome

**Answer: C**

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**21.** The haemoglobin like pigment can be traced in

A. seeds of legume

B. Clostridium

C. Rhizobium

D. leguminous root nodules

**Answer: D**

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**22.** Pigment, leghaemoglobin is present in roots of

A. maize

B. rice

C. soybean

D. potato

**Answer: C**

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**23.** The accumulation of phosphorus is more in

A. older leaves

B. older roots

C. younger roots

D. younger leaves

**Answer: D**

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**24.** The element required by an enzyme urease to hydrolyse urea by living organisms

A. nickel

B. calcium

C. boron

D. potassium

**Answer: A**

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**25.** Most of the plants obtain nitrogen from the soil in the form of

A. free nitrogen gas

B. nitric acid

C. nitrates

D. nitrites

**Answer: C**

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**26.** Major nitrogen fixation is carried out by

A. lightning

B. chemical industries

C. symbiotic bacteria

D. leaching

**Answer: C**

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**27.** Nitrosomonas bacteria converts

A. $NO_3$ into $NH_3$

B. $NH_3$ into $NO_2$

C. $NO_2$ into $NO_3$

D. $NO_2$ into $NH_3$

**Answer: B**

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**28.** The nitrifying bacteria are

A. photoautotrophs

B. chemoautotrophs

C. chemoheterotrops

D. saprotrophs

**Answer: B**

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**29.** Nitrite ions are reduced to ammonia by ferredoxin in

A. root

B. stem

C. leaves

D. all of these

**Answer: D**

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**30.** One of the following is a nitrogen-fixing enzyme

A. urease

B. arginase

C. nitrate

D. all of these

**Answer: C**

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**31.** Which of the following does not fix atmospheric nitrogen?

A. Nostoc

B. Anabaena

C. Spirogyra

D. Azotobacter

**Answer: C**

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**32.** A nitrogen-fixing cyanobacteria found in coralloid root of cyacas is

A. Aulosira fertilissima

B. Anabaena

C. Scytonema

D. All of these

**Answer: B**

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**33.** In plants, nitrate is reduced to ammonium state in two steps, in second step, electrons are donated by

A. ferredoxin

B. nitrate reductase

C. nitrite reductase

D. cytochrome-$b_5$

**Answer: A**

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**34.** The concentration of a macroelement per gram of dry matter in plants is at least

A. 1000 $\mu g / g$ of dry matter

B. 100 $\mu g \frac{g}{g}$ of dry matter

C. 1500 $\mu g / g$ of dry matter

D. 995 $\mu g / g$ of dry matter

**Answer: A**

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**35.** The major role of minor element inside living organisms is to act as:

A. binder of cell structure

B. constituent of hormones

C. building blocks of an important amino acids

D. cofactor of enzymes

**Answer: D**

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**36.** "Dieback" citrus and 'reclamation' of legumes and cereals is due to the deficiency of

A. copper

B. zinc

C. soodium

D. molybdenum

**Answer: A**

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**37.** The yellowing of leaves called chlorosis, is caused by insufficient

A. sodium

B. phosphorus

C. copper

D. magnesium

**Answer: D**

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**38.** Which one of the following elements is absorbed by plants from soil directly?

A. Carbon

B. Nitrogen

C. born

D. hydrogen

**Answer: C**

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**39.** A trace element, also required for plant growth, and in the form of radio active isotope useful in cancer therapy is

A. iron

B. calcium

C. cobalt

D. sodium

**Answer: C**

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**40.** 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 dificency would show such symptoms?

A. sulphur and potassium

B. Magnesium

C. Nitrogen

D. Potassium

**Answer: A**

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**41.** $Ca^{+2}$ is an essential element in plants. The major function it perform is

A. selective permeability of the cell membrane

B. maintenance of the cell turgidity

C. energy transfer

D. protein synthesis

**Answer: A**

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**42.** Which one of the following elements is not required by plants for their healthy normal growth?

A. Calcium

B. Magnesium

C. Lead

D. Iron

**Answer: C**

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**43.** Foliar absorption of iron helps in rapid recovery from iron deficency. It is sprayed in the form of

A. $FeSO_4$

B. $FeCl$

C. $Fe - EDTA$

D. $Na - EDTA$

**Answer: C**

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**44.** Which ion is essential for maintaining the permeability of the cell membrane?

A. $Cu^{2+}$

B. $Ca^{2+}$

C. $Mg^{2+}$

D. $Fe^{2+}$

**Answer: B**

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**45.** An element that plays important role in increasing hardness and heling themaintenance of turgidityof cell is

A. boron

B. chlorine

C. potassium

D. molybdenum

**Answer: C**

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**46.** Legume plants are important for atmosphere because thet

A. help in nitrogen fixation

B. do not help in $NO_2$ fixation

C. increase soil fertility

D. possesses Rhizobium bacteria

**Answer: A**

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**47.** generally plant hat have symbiotic relations with $N_2$-fixing bacteria,plant receive from the bacteria

A. ammonium

B. oxygem

C. nitates

D. hydrogen

**Answer: C**

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**48.** Under anaerobic conditions, denitrifying bacteria such as Pseudomonas could convert

A. nitrates to nitrites

B. nitrates to molecular nitrogen

C. nitrite to nitrates

D. nitrates to ammonia

**Answer: B**

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**49.** All the nitrogenase enzyme has been inactivated by rediation. There will be no

A. fixation of atmospheric nitrogen

B. fixation of nitrogen by legumes

C. conversion of nitrate to nitrite in legumes

D. convertion of ammonia to nitrate in soil

**Answer: B**

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**50.** 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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**51.** A trace element is/are

A. required is very minute amounts by plant

B. a radioactive and can be traced by geiger counter

C. an element which draws other element out of protoplasm

D. all of the above

**Answer: A**

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**52.** A micronutrient is one which

A. is less important than the major essential element

B. is present in large quantities in the soil

C. is more important than the major essential element

D. is needed in very small amount but it is as important as a major essential element

**Answer: D**

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**53.** Microelements are those essential elements which are required by the plants in concentration

A. less tan 1 mg/g of dry mattery

B. less than 1g/10 g of dry mattery

C. more than 1mg/g of dry matter

D. equal to 1mg/g of dry matter

**Answer: A**

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**54.** 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 is enchanced

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

D. none of the above

**Answer: A**

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**55.** 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: B**

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**56.** How is ash significant in the study of mineral nutrition of plants?

A. It gives quantitative values of minerals in soil

B. it informs, which element is essential and in which amount it is necessary for a particular plant

C. it is of no practical significance

D. it indicates how much irrigation is needed for a plant

**Answer: B**

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**57.** The most important use of potassium is that it

A. provides red colour to fruit

B. aids photosynthesis

C. influences enzymatic activity, which regulates many plant processes

D. helps in the formation of the cambium

**Answer: C**

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**58.** The elements that take part in catalytic reactions are

A. carbon, hydrogen, oxygen

B. zinc, manganese, copper

C. phosphorus, potassium, oxygen

D. nitrogen, oxygen, zinc

**Answer: B**

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**59.** Farmers in a particular region were concerned that pre-mature yellowing of leaves of a pulse crop might caused decrease in the yield. Which treatment could be most be most beneficial to obtain maximum seed yield?

A. frequent irrigation of the crop

B. treatment of the plants with cytokinins along with a small dose of nitrogenous fertiliser

C. removal of all yellow leaves and apraying the remaining green leaves with 2,4,5-trichlorophenoxy acetic acid

D. application of iron and magnesium to promote synthesis of chlorophyll

**Answer: D**

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**60.** 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 in induced

C. appearance of brown spot surrounded by chlorotic veins

D. none of the above

**Answer: B**

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**61.** Which of the following association fix nitrogen through non-nodulation?

A. roots of maize associated with spirillum notatum

B. roots of digitaria in association with spirillum notatum

C. coralloiod roots of cycas is associated with anabaena

D. all of the above

**Answer: D**

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**62.** Bacteria that fix nitrogen for plants as clover, beans, etc. belongs to which of the following genera?

A. Denitrovibrio

B. Rhizobium

C. Pseudomonas

D. Nitrobacter

**Answer: B**

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**63.** Leghaemoglobin is useful for legumes because it

A. irreversible absorbs $O_2$ which inhibit $N_2$-fixation

B. reversible absorbs $O_2$ which inhibit $N_2$-fixation

C. protects plant tissues from damage by symbiotic bacteria

D. absorbs $O_2$ at low oxygen tension and provides it to the tissue surrounding $N_2$-fixing bacteria

**Answer: B**

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**64.** What does the given reaction show ?

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**65.** Deficiency of which group of elements can cacuse inhibition of cell division in plants ?

A. N, K, Mg, S, Fe

B. N, K, S

C. Ca, Mg, Cu

D. N,K,Mo

**Answer: B**

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**66.** Choose the correct option.

A. Nitrogen fixation is the process of ammonia formation by nitrogen

B. Ammonia converted in nitrite by Clostridium

C. Nitrogenase gets active in the presence of oxygen

D. none of the above

**Answer: A**

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**67.** Choose the group of denitrification bacteria

A. Nitrosomonas, Clostridium

B. Pseudomonas, Nitrobacter

C. Thiobacillus, Micrococcus

D. Thiobacillus, bacillus vulgaris

**Answer: C**

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**68.** In leguminous plant leghaemoglobin acts as oxigen scavenger, similary in Frankia have

A. hopanoid

B. catalase

C. glucose oxidase

D. protocatechuate dioxygenase

**Answer: A**

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**69.** A gardener f shows a 'X' and the wants that plant 'X' grows without any lateral branches. What does he apply to the field?

A. Zinc to promote auxin synthesis

B. Manganese to promote auxin synthesis

C. sulphur to promote auxin synthesis

D. Iron to promote auxin synthesis

**Answer: A**

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**70.** How many of them are actinorhizal plants

(Pisum sativum, Alnus, Casuarina, Cycas, Myrica, Oryas, Purshia, Coriaria, Mango, Soybean

A. 2

B. 7

C. 6

D. 7

**Answer: C**

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**71.** Which of the genes are responsible for the formation of nodule in leguminosae plants ?

A. Nod gene of legume and Fit gene of bacteria

B. Nod gene of bacteria and niF gene of legume

C. Nod gene of legume and niF gene of bacteria

D. none of the above

**Answer: C**

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## Chapter Exercises B Taking It Together Medical Entrances Special Format Questions Statement Based Questions

**1.** Which of the following combination(s) is/are not correct?

I. Tea yellow- Boron

II. Whiptail of crucifers-molybdenum

III. Yellow spot of citrus-Magnase

IV. Khaira disease of rice- Zinc

A. I and III

B. Only II

C. I,II and III

D. Only III

**Answer: A**

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**2.** The deficiency symptom(s) of nitrogen in plants

is/are I. dormancy fo lateral buds

II. Delaying of flowring

III. Inhibits protein synthesis

IV. Inhibition of chloroplast formation

A. I and III

B. II and III

C. I,II and III

D. Only IV

**Answer: C**

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**3.** mark the statements as Tre (T)/False (F) by

Choosing the correct option from the set (I-IV) given below.

I. Magnesium is a constituent of chlorophyll and helps to maintain the ribosome structure.

II. Calcium is needed during the formation of mitotic spindle.

ltBrgt III. Magnesium is essential for the photolysis of water.

ltBrgt IV. zinc helps in sugar translocation.

A. I-T,II-T,III-F,IV-F

B. I-F,II-T,III-F,IV-T

C. I-T,II-F,III-T,IV-F

D. I-F,II-F,III-T,IV-T

**Answer: A**

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**4.** Hydroponics

I. is useful in areas having infertile and dry soils

II. Can regulate pH optimum for a particular crop.

III. Increases labour cost.

IV. Increases problem of weeding.

A. II and IV

B. I and II

C. I and III

D. All of the above

**Answer: B**

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**5.** Which of the following statement(s) is/are not correct in reference to hydroponics?

I. iIt determines the mineral nutrients essential for the plants.

II. The hydroponics involves the culture of plants in a soilless medium.

III. Hydroponics requires purified water with non-defined mineral nutrients salts.

IV. Hydroponics technique, can be used for producing lettuce.

Choose the correct options.

A. Only IV

B. I and II

C. Only III

D. None of these

**Answer: C**

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**6.** An element must be considered essential, when

I. the element is necessary for supporting normal growth and reproduction of the plants.

II. The deficiency of that particular element cannot be met by supplying some other element.

III. The element is directly involved in the metabolism of the plants

Choose the correct option.

A. I and III

B. Only II

C. II and III

D. All of these

**Answer: D**

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**7.** Nitrogen is required mainly by which of the following parts of the plants?

I. meristematic tissues.

II. Differentiating tissues.

III. Apical tissues.

IV. Metabolically active cell. ltBrgt Choose the correct option.

A. Only II

B. Only I

C. I and II

D. I and IV

**Answer: D**

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**8.** Read the functions given below and identify the concerned nutrient.

I. Activator of catalase.

II. Important constituent of cytochrome.

III. Important constituent of proteins involved in ETS. ltBrgt IV. Essential for chlorophyll synthesis.

A. Mo

B. Fe

C. Cu

D. Ca

**Answer: B**

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**9.** $Mg^{2+}$ is an activator of

I. Alcohol dehydrogenase.

II. Nitrogenase. ltBrgt III. Ribulose bisphosphate carboxylase oxygenase.

IV. Phosphoenol pyruvate carboxylase.

Choose the correct option.

A. Only III

B. Only I

C. Only IV

D. III and IV

**Answer: D**

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## Chapter Exercises B Taking It Together Medical Entrances Special Format Questions Assertion And Reason

**1.** Assertion : Iron is a microelement

Reason : Microelements are required in traces only, less than 1 mg/gm of dry matter

A. Both Assertion and Reason are true and Reason is the correct explanation of assertion

B. Both assertion and Reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

**Answer: A**

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**2.** Assertion: Calcium is a constituent of cell wall.

Reason: Calcium is required in mitotic division.

A. Both Assertion and Reason are true and Reason is the correct explanation of assertion

B. Both assertion and Reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

**Answer: B**

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**3.** Assertion: Manganese is an activation of enzyme nitrite reductase

Reason : Manganese deficient cells prefer ammonia over nitrate

A. Both Assertion and Reason are true and Reason is the correct explanation of assertion

B. Both assertion and Reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

**Answer: A**

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**4.** Assertion : Plants absorb nitrogen in the form of nitrates only.

Reason : Nitrogen is the most critical element.

A. Both Assertion and Reason are true and Reason is the correct explanation of assertion

B. Both assertion and Reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

**Answer: D**

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**5.** Assertion: Magnesium is important in photosynthesis and carbohydrate metabolism.

Reason : $Mg^{++}$ is involved in the synthesis of nucleic acids

A. Both Assertion and Reason are true and Reason is the correct explanation of assertion

B. Both assertion and Reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

**Answer: B**

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**6.** Assertion: Deficiency of sulphur causes chlorosis in plants.

Reason: Sulphur is a constituent of chlorophyll.

A. Both Assertion and Reason are true and Reason is the correct explanation of assertion

B. Both assertion and Reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

**Answer: C**

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**7.** Assertion : Leguminous plants are nitrogen fixers.

Reason : Leguminous plants have Rhizobium in their root nodules

A. Both Assertion and Reason are true and Reason is the correct explanation of assertion

B. Both assertion and Reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

**Answer: A**

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**8.** Assertion : Nitogen - fixing bacteria in legume root nodules survive in oxygen - depleted cells of nodules.

Reason : Leghaemoglobin completely removes oxygen from the nodule cells.

A. Both Assertion and Reason are true and Reason is the correct explanation of assertion

B. Both assertion and Reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

**Answer: A**

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## Chapter Exercises C Medical Entrances Gallery Collection Of Questions Asked In Neet Various Medical Entrance Exams

**1.** In which of the following, all three are macronutrients

A. Iron, copper, molybdenum

B. Molybdenum, magnesium, manganese

C. Nitrogen, calcium, phosphorus

D. Boron, zinc, manganese

**Answer: C**

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**2.** Which of the following is not a macro-nutrient

Or

Which is essential for the growth of root tip

A. Zn

B. Fe

C. Ca

D. Mn

**Answer: C**

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**3.** Which of the following bacterium causes denitrification?

A. Azotobacter

B. Nitrobacter

C. Nitrosomonas

D. Pseudomonas

**Answer: D**

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**4.** The element responsible for the ring structure of chlorophyll and manintenance of ribosome structure is

A. K

B. S

C. Mg

D. Ca

**Answer: C**

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**5.** Statement I. mineral salt absortpion is an active process.

II. Explanation metabolic energy is not used in active

absorption

A. I is correct, II is incorrect

B. I is incorrect, II is correct

C. I and II both are correct

D. I and II both are incorrect

**Answer: A**

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**6.** An element essential for nitrogen metabolism is

A. Manganese

B. Magnesium

C. Zinc

D. Molybdenum

**Answer: D**

Watch Video Solution

**7.** The enzyme nitrogenase is

A. Cu-Fe protein

B. Ni-Fe protein

C. Mo-Fe protein

D. Mi-Cu protein

**Answer: C**

Watch Video Solution

**8.** During biological nitrogen fixation, inactivation of nitrogenase by oxygen poisoning is prevented by

A. Leghaemoglobin

B. Xanthophyll

C. Carotene

D. Cytochrome

**Answer: A**

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**9.** Function of leghaemoglobin during biological nitrogen-fixation in root nodules of legumes is to

A. convert atmospheric nitrogen to ammonia

B. convert ammonia to nitrite

C. transport oxygen for activity of nitrogenase

D. protect nitrogenase from oxygen.

**Answer: D**

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**10.** Conversion of organic nitrogen into ammonia, $N_2$ gas into ammonia, nitrates into ammonia and ammonia into nitrates are respectively known as

A. nitrogen-fixation, nitrate reduction, nitrification, ammonification

B. ammonification, nitrogen-fixation, nitrate reduction, nitrification

C. nitrification, ammonification, nitrogen-fixation, nitrate reduction

D. nitrogen-fixation, nitrate reduction, denitrification, ammonification

**Answer: B**

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**11.** Identify the physiological function of two microelements. Of them, the former is required for synthesis and the latter for oxidation of IAA respectively.

I. constituent of chlorophyll molecule.

II. Maintenance of cell turgidity.

III. splitting of water in photosynthesis.

IV. cofactor for carboxypeptidase.

V. component of methionine.

A. II and V

B. IV and II

C. V and I

D. IV and III

**Answer: D**

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**12.** On which surface of cell Donnan equilibrium occur

" " Or

Demosome is a modification of

A. Cell walls

B. Plasma membrane

C. Transport

D. Nuclear membrane

**Answer: B**

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**13.** In reductive amination, the product is

A. $\alpha$-ketoglutaric acid

B. glutamine

C. glutamate

D. alanine

**Answer: C**

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**14.** During symbiotic nitrogen-fixation, how many ATPs are used in fixing one mole of $N_2$?

A. 8

B. 16

C. 5

D. 10

**Answer: B**

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**15.** Mo is part of enzyme:

A. reverse transcriptase

B. restriction endonuclease

C. hexokinase

D. nitrogenase

**Answer: D**

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**16.** the process of conversion of nitrogen to ammonia by microbes is

A. nitrification

B. denitrification

C. nitrogen-fixation

D. Haber's process

**Answer: C**

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**17.** One element is involved in opening and closing of stomata, the other helps to maintain ribosome structure. They are

A. K and Ca

B. P and S

C. K and Mg

D. Fe and Mg

**Answer: C**

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**18.** Free-living nitrogen-fixing aerobic bacterium is

A. Rhodospirillum

B. Anabaena

C. Nostos

D. Beijerinckia

**Answer: D**

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**19.** Carefully read the following reactions carried out by nitrifying bacteria. Identify the statement about these equations which is not true

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

$2NO_2^- + O_2 \rightarrow 2NO_3^+ (II)^-$

A. Step I is carried out by Nitrosomonas or Nitrosococcus

B. Step II is carried out by Nitrobacter

C. Both the steps I and II can be called nitrification

D. Both the steps occur only in photoautotrops

**Answer: D**

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

A. young leaves

B. roots

C. buds

D. senescent leaves

**Answer: D**

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**21.** Besides paddy fields, cyanobacteria are also found inside vegetative part of:

A. Psilotum

B. Pinus

C. Cycas

D. Equisetum

**Answer: C**

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**22.** The first stable product of fixation of atmospheric nitrogen in leguminous plants is

A. ammonia

B. $NO_3^-$

C. glutamate

D. $NO_2^-$

**Answer: A**

Watch Video Solution

**23.** The most abundant intracellular cation is

A. $Ca^{++}$

B. $H^+$

C. $K^+$

D. $Na^+$

**Answer: C**

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**24.** Element involved in nitrogen -fixation is

A. Zinc

B. boron

C. iron

D. chlorine

**Answer: C**

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**25.** X' is essential micronutrient required in leaves and roots. Major. Functions of 'X' is to perform metabolism of urea and uric acid and its deficiency causes leaf tip necrosis. It is

A. sulphur

B. magnesium

C. zinc

D. nickel

**Answer: D**

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

A. potassium

B. sodium

C. aluminium

D. cobalt

**Answer: A**

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**27.** Consideer the following statements

I. sulphur is present in two amino acids cysteine and valine

II. Lower level of N,K,S and Mo causes inhibition of cell division.

III. Microbe that fix nitrogen in the roots of non-leguminous plants alums in frankia

IV. Denitrification is carried by bacteria Nitrosomonas and nitrobacter

Select the correct pair of statements.

A. I and III

B. I and III

C. II and III

D. II and IV

**Answer: C**

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**28.** Minerals involved in carbohydrate translocation, maintaining ribosome structure and activation of nitrogenase respectively are

A. Mn,B,Ca

B. Ca,Mg,Mo

C. B,Mg,Mo

D. Cu,Mg,B

**Answer: C**

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**29.** Identify the role of lectins in formation of root nodules in legumes.

A. Formation of shepherd's crook

B. Recognition of compatible Rhizobium by host

C. Formation of peribacterial membrane

D. Formation of infection thread

**Answer: B**

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**30.** Which two distinct microbial processes release dinitrogen $(N_2)$ from fixed nitrogen?

A. Decompose of organic nitrogen, conversion of dinitrogen to ammonium compounds

B. Enteric fermentation in cattle and nitrogen-fixation by Rhizobium in root nodules of legumes

C. Anaerobic ammonium oxidation and denitrification

D. Aerobic nitrate oxidation and nitrite reduction

**Answer: C**

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**31.** Which element is constituent of biotin?

A. Calcium

B. Phosphorus

C. sulphur

D. magnesium

**Answer: C**

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**32.** Hydroponics is growing plants in

A. Without soil

B. without organic matter

C. in water

D. all of these

**Answer: D**

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**33.** Plants obtain mineral nutrients from

A. rocks

B. breakdown products of rocks

C. soil

D. all of these

**Answer: D**

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**34.** In nitrogen cycle, Pseudomonas

A. Fies nitrogen

B. Produces elemental nitrogen

C. Oxidises ammonium nitrogen to nitrate

D. Transfer of elemental nitrogen

**Answer: B**

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**35.** Which one of the following an incorrect staetment?

A. Anabaena and nostoc are capable of fixing nitrogen in free-living state also

B. root nodule forming nitrogen fixers live as aerobes under free-living conditions

C. phosphorus is a constituent of cell membranes, certain nucleic acids and all proteins

D. Nitrosomonas and nitrobacter are chemoautotrophs

**Answer: C**

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**36.** Which one of the following helps in absorption of phosphorus from soil by plants

or

Which one of the following microbes forms symbiotic association with plants and helps them in their nutrition

A. Azotobacter

B. Aspergillus

C. Glomus

D. Trichoderma

**Answer: A**

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**37.** Micronutrients are

A. Mn,Ni and Zn

B. O,Cu and B

C. Mg, Mn and Mo

D. Ca, S and Fe

**Answer: A**

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**38.** An essential element is that, which

A. improves health of the plant

B. is irreplaceable and indispensable for the growth of plants

C. is found in plant ash

D. is available in the soil

**Answer: B**

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**39.** Necrosis to crops is due to the deficiency of

A. Ca,K,S andMo

B. N,K,S and Mo

C. N,S,Fe and Zn

D. Mg,S,Mn and Ca

**Answer: A**

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**40.** Which of the following micronutrient helps in $N_2$-fixation?

A. Mo

B. Ca

C. Bo

D. Na

**Answer: A**

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**41.** Which element is required for the germination of pollen grains?

A. Boron

B. calcium

C. Chlorine

D. Potassium

**Answer: A**

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**42.** Nutrifying bacteria

A. convert free nitrogen to nitrogen compounds

B. convert proteins into ammonia

C. reduce nitrates to free nitrogen

D. oxidise ammonia to nitrates

**Answer: A**

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**43.** In root nudules of legumes, leghaemoglobin is important because it

A. transport oxygen to the root nodule

B. acs as an oxygen scavenger

C. provides energy to theh nitrogen-fixing bacterium

D. acts as a catalyst in transamination

**Answer: B**

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**44.** Minerals are abosrbed by plants in

A. colloidal form

B. ionic form

C. precipitated form

D. None of these

**Answer: B**

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**45.** Khaira disease of rice' is due to

A. fungus

B. bacteria

C. Zn deficiency

D. Bo deficiency

**Answer: C**

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

A. Magnesium

B. Zinc

C. potassium

D. Calcium

**Answer: B**

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**47.** Which of the following minerals activate the enzymes involved in respiration?

A. Nitrogen and phoshorus

B. Magnesium and manganese

C. Potassium and calcium

D. Sulphur and iron

**Answer: B**

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**48.** Select the match ones.

I. nitrosomonas-Nitrite to nitrate ltBrgt II. Thiobacillus-

Denitrification.

III. Nostoc-Free-living nitrogen-fixer

IV. Azotobacter-Anaerobic nitrogen-fixer

A. I and III

B. III and IV

C. II and III

D. II and IV

**Answer: C**

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**49.** Which one of the following is not a micronutrient

A. Molybdenum

B. Magnesium

C. Zinc

D. Boron

**Answer: B**

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**50.** Which of the following is an amide involved in nitrogen metabolism by plants ?

A. Glutamate

B. Alanine

C. Asparagine

D. Serine

**Answer: A**

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**51.** Which of the following is a bacterium involvedin denitrification?

A. Nitrococcus

B. Nitrosomonas

C. Pseudomonas

D. Nitrobacter

**Answer: C**

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**52.** The minerals involved in waer splitting reaction during photosynthesis are

A. magnesium and chlorine

B. potassium and manganese

C. manganese and chlorine

D. molybdenum and manganese

**Answer: C**

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**53.** Necrosis, or death of tissue particularly leaf tissue, is due to the deficiency of

A. N,K and S

B. N,K,Mg and Fe

C. Mn,Zn and Mo

D. Ca,Mg,Cu and K

**Answer: D**

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**54.** Manganese is required in

A. nucleic acid synthesis

B. plant cell wal formation

C. photolysis of water during photosynthesis

D. chlorophyll synthesis

**Answer: C**

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**55.** Insectivorous plants live in a soil that is usually deficient in

A. nitrogen

B. chloride

C. potassium

D. magnesium

**Answer: A**

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**56.** The enzyme responsible for the reduction of molecular nitrogen to the level of amonia in leguminous root nodule is

Or

The enzyme reponsible for atmospheric nitrogen fixation is

A. nitrogenase

B. nitrate reductase

C. nitrite reductase

D. hydrogenase

**Answer: A**

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**57.** Which one depicts nitrogen-fixation?

A. $N_2 \rightarrow NH_3$

B. $N_2 \rightarrow NO_3$

C. Both (a) and (b)

D. $N_2 \rightarrow$ amino acids

**Answer: C**

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**58.** Plant having nitrogen fixing bacteria is

A. cottom

B. wheat

C. gram

D. mustard

**Answer: C**

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**59.** Bacterium, which reduces nitrates in soil to nitrogen is

A. Nitrosomonas, Clostridium

B. Pseudomonas, Nitrobacter

C. Clostridium

D. Rhizobium

**Answer: B**

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**60.** Which one of the following plant functions as symbiotic nitrogen-fixing plant?

A. Azolla

B. Cyacas

C. Moss

D. Marchantia

**Answer: A**

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**61.** A free-living nitrogen-fixing cyanobacterium which can also form symbiotic association with the water fern Azolla is :

A. Tolypothrix

B. Chlorella

C. Nostoc

D. Anabaena

**Answer: D**

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**62.** Nitrifying bacteria are able to

A. convert atmospheric nitrogen into soluble forms

B. convert ammonia to nitrate

C. ammonia to nitrogen

D. nitrate to nitrogen

**Answer: B**

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

A. phosphorus and sulphur

B. sulphur ad magnesium

C. magnesium and sodium

D. calcium and phosphorus

**Answer: A**

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**64.** On the basis of symptoms of chlorosis in leaves, a student inferred that this was due to deficiency of nitrogen. This inference could be correct only if we assume that yellowing of leaves apeared first in

A. old leaves

B. young leaves

C. young leaves folowed by mature leave

D. mature leaves followed by young leaves

**Answer: A**

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

A. trace elements

B. non-essential

C. macronutrients

D. none of these

**Answer: A**

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**66.** Nitrite is converted to nitrate by

A. Nitrosomonas, Clostridium

B. Nitrobacter

C. Pseudomonas

D. Clostridium

**Answer: B**

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**67.** Who proved for the first time that the plants contain a large number of minerals and microelements?

A. Desaussure (1804)

B. Leibeg (1840)

C. Glauber and Mayhon (1650)

D. Arnon and Stout (1939)

**Answer: B**

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**68.** Hydroponics is a system of growing plants in

A. soilless culture or solution culture

B. acidic soils

C. soilless culture with alkaline pH

D. soilless cultre with acidic pH

**Answer: A**

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**69.** Grey spots of oat are caused by the deficiency of

A. manganese

B. iron

C. copper

D. zinc

**Answer: A**

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

A. carbon, nitrogen and hydrogen

B. carbon, hydrogen and oxygen

C. nitrogen, phosphorus and potassium

D. calcium, magnesium and sulphur

**Answer: B**

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