BIOLOGY

BOOKS - MAXIMUM PUBLICATION

MINERAL NUTRITION

Exercise

1. Which one of the folowing role is not characteristic of an essential element?

A. being a component of biomcilecules

B. changing the chemistry of soil

C. being a structural component of energy related chemical compounds

D. activaton or inhibiton of enzymes

Answer: B

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2. Which one of the following statements can best expiain the term cribcal concentraton of an essental element

A. essential element concentration below which plant growth is retarded.

B. essental element concentration below which plant growth becomes stunted.

C. essental element concentration below which plant remains in the vegetabve phase

D. none of the above

Answer: B

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3. with regard to the Bioiogical Nitrogen Fixation by can best Rhizobium in associstion with soyabean, which one essental of the following statementstatements does not hold true

A. Nerogenase may require oxygen for its functionin

B. Nitrogenase is MO- Fe protein

C. Leg-hemoglobin is a pink cooured pigment

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

Answer:

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4. Find the odd one out. Boron, Copper, Zinc, Phosphorous

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5. Plants can be cultivated in water. Name the type of cultivation.

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

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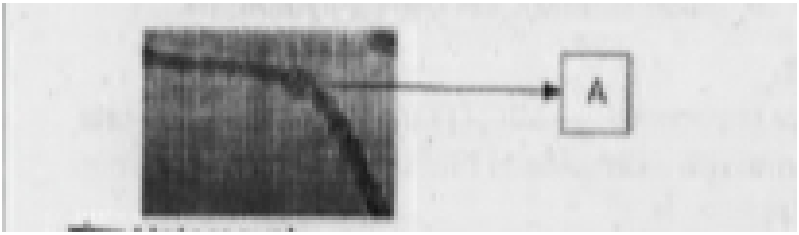
7. In the diagram below, Label the cellA in Nostoc.



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8. Which one of the following statements can best explan the term critcal concentration of an essental element?

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C. essential element concentration bekow which plant remains in the vegetable phase.

D. none of the above

Answer:

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9. From where do plants recelive hydrogen

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10. Give example for Free living N_2 fixing bacteria

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11. Give example for Symbiotic N_2 fixing bacteria

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12. Crop plants cannot grow well in the nitrogen defcient soll while plants like Drosera and Nepenthes show vigorous growth Justly the statement

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13. Study the relation of the given pair and fill up the blanks:Potassium: Stomatal movement _ :Constituent of chlorophyll

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14. Study the relation of the given pair and fill up the blanks: _ : Pollen germination Zinc: iosynthesis of auxin.

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15. Study the relation of the given pair and fill up the blanks:Ion exchange: Passive absorplion _ :Active absorption

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16. Plants can be grown in defined nutrient solution in the absence of soil.Who demonstrated the technique for the first time?

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17. For the normal growth of plants it requires minerals. Write two examples of micro and macro elements

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18. A farmer supplies Nitrogen fertilizer to pea plants Justify your answer with reason.

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19. Observe the relationship between the first pair and fill in the blanks.Potassium : Opening and closing of stomata.::Boron _

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20. Leguminous plants can be cultivated in between rice cultivation. Why?

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21. Even though more than sixty elements are found in different plants, all are not essential. Write any two

criteria for the essentiality of an element.

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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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Example

1. Farmers in a particular region were concerned that pre-mature yellowing of leaves of a pulse crop might cause

ddecrease in the yield. Which treatment could be more benificial to obtain maximum seed yield?

A. Frequent irrigaion of crop

B. Treatment of the plants with cytokinins alonng with a small dose of nitrogenous fertilizer

C. Removal of all yellow leaves and spraying the remaning 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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2. For nitrogen fixatin, useful pigment is

A. nitrogenase

B. haemoglobin

C. myoglobin

D. leghamoglobin

Answer: D

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3. Plants cultivated in nutrient solution without soil is called

A. somatic hybbridization

B. tissue culture

C. hydroponics

D. suspension culture

Answer: C

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4. The process of decay of dead organic matter is known as

A. drnitrificaton

B. nitrifcation

C. nitrogen fixation

D. ammonification

Answer: D

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5. Zn, Mo, Fe, Cu are

A. trace elements

B. non-essentials

C. macronutrients

D. both a and b

Answer: A

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6. An essential element is that which

A. improves health of the plants

B. is irreplaceable and indispensable for growth of plants

C. is found in plant ash

D. is available in the soil

Answer: B

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7.

$(N_2 + 8e + 8H + 16ATP \rightarrow 2NH_3 + 2H + 16ADP + 8e)$

The above equation refers to

A. ammnionification

B. nitrification

C. nitrogen fication

D. denitrification

Answer: C

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8. Micronutrients are

A. as important as macronutrients but are required in small amount

B. less important that macronutrients

C. callrd micro as they play only a minor role in plant nutrition

D. required great than 10mmol/Kg of dry matter

Answer: A

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9. Which element is located at the center of the porphyrin ring in chlorophyll?

A. Potassium

B. Manganese

C. Calcium

D. Magnesium

Answer: D

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

A. Boron

B. Calcium

C. Chlorine

D. Potassium

Answer: A

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11. Select the correct statement.

A. Legumes are incapable of fixing nitrogen

B. Legumes fix nitrogen through bacteria living fruits

C. Legumes fix nitrogen only by bacteria present in root nodules

D. frankia forms sybiotic association with algae

Answer: C

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12. Chlorosis is caused due to deficiency of

A. magnesium

B. Calcium

C. boron

D. manganese

Answer: A

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13. Enzyme nitrogenase is responsible for

A. nitrification

B. nitrogen fixation

C. nitrite reduction

D. nitrate reduction

Answer: B

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14. Maximum percentage of which element occurs in plant ash?

A. Magnesium

B. Zinc

C. Potassium

D. Calcium

Answer: D

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15. Which of the following metals cuses bone cancer

A. Lead

B. Cobalt

C. Uranium

D. strontium

Answer: D

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16. Premature leaf fall is due to deficiency of

A. phosphours

B. nitrogen

C. calcium

D. potassium

Answer: A

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17. The function of leg haemoglobin during biological nitrogen fixation in root nodules of legumes is to

A. convert atmospheric nitrogen to ammonia

B. convert ammonia to nitrogen

C. transport oxygen for activity of nitrogenase

D. protect nitrogenase from oxygen

Answer: D

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18. Which of the following gene is responsible for biological nitrogen fixation ?

A. Nitrogenase

B. Nif gene

C. Yeast alanine tRNA synthetase

D. RNA synthetase

Answer: B

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