Chapter:12 Mineral Nutrition

True and False

Q.No	Question	Answer True/ False	Typology
Q.1	The technique of growing plants in absence of nutrient solution is known as Hydroponics.	False	Knowledge
Q.2	The enzyme Nitrogenase requires aerobic conditions to convert atmospheric Nitrogen to Ammonia .	False	Understanding
Q.3	The requirement of the essential element is specific and not replaceable by another element.	True	Knowledge
Q.4	Macronutrients are generally required by plants in less than 10 mmole /Kg of dry Matter.	False	Knowledge
Q.5	Calcium is used in the synthesis of cell wall, particularly in middle lamella.	True	Understanding
Q.6	Nitrogen helps in maintaining ribosome structure at the time of Translation.	False	Application
Q.7	Iron and Zinc are macronutrients.	False	Knowledge
Q.8	The deficiency symptoms of Nitrogen and Potassium are visible first in senescent leaves.	True	Analysing
Q.9	*Azotobactor* and *Beijernickia* are free living Nitrogen Fixing Aerobic Bacteria.	True	Knowledge
Q.10	Glutamic Acid is formed by Ketoglutaric Acid in the process Reductive Amination.	True	understanding
Q.11	Amides contain less nitrogen than the amino acid .	False	Knowledge
Q.12	*Frankia* produces Nirogen fixing nodules in nonleguminous plants.	True	Knowledge
Q.13	The enzyme Nitrogenase is present exclusively in Eukaryotes.	False	Knowledge
Q.14	The initial rapid uptake of ions from free space or outer space of cells through apoplast is passive.	True	understanding
Q.15	Boron is required for calcium utilization and pollen germination.	True	Knowledge

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Multiple Choice Questions

Q.No	Question	Answer	Typology
Q.1	Ammonia is oxidized to nitrite by- A.Nitrogenase B. Nitrosomonas C. Lipase D. Dehydrogenase	B Nitrosomonas	Understanding
Q.2	Loss of Chlorophyll which leads to yellowing of leaves is known as- A. Necrosis B. Abscission C. Chlorosis D. Senescence	C. Chlorosis	knowledge
Q.3	The movement of Ions from the free space or outer space of cells is called- A. Flux B. Apoplast C. Symplast D. Active Process	B. Apoplast	understanding
Q.4	Chlorine is essential for- A. Pollen germination B. Cell wall synthesis C. Mitosis D. Photolysis of Water	D. Photolysis of Water	Knowledge
Q.5	Manganese competes with the following elements in mineral uptake by plants- A. Nitrogen and Phosphorus B. Iron and Chlorine C. Iron and Magnesium D. Copper and iron	C. Iron and Magnesium	Analysing
Q.6	Synthesis of one Ammonia molecule by Nitrogenase requires- A. 10 ATPs B. 12 ATPs C. 8 ATPs D. 5 ATPs	C. 8 ATPs	Knowledge
Q.7	Following elements are macronutrients – A. Iron and Copper B. Aluminium and Magnesium C. Potassium and calcium D. Sulphur and Iron	C. Potassium and Calcium	Knowledge

Q.8	Hydroponics has been successfully employed for the commercial production of – A. Wheat and Rice B. Tomato and Lettuce C. Wheat and Millets D. Banana and Grapes	B. Tomato and Lettuce	Application
Q.9	Deficiency of the following elements causes delay in flowering- A. N, S, Mo B. Cl ,K, Fe C. Mg , Mn ,Cu D. Ni, Fe,Cu	A. N,S ,Mo	Knowledge
Q.10	Cystein and Methionine contain the following element- A. Cl B. Mg C. S D. Fe	C. S	Knowledge

Fill in the Blanks

Q.No	Question	Answer	Typology
Q.1	Technique of growing plants in a nutrient solution is known as _____.	Hydroponics	Knowledge
Q.2	Any mineral ion concentration that reduces the dry weight of tissues by about_____ is considered toxic.	10%	Understanding
Q.3	The movement of ions across the cells is called_____.	Flux	Knowledge
Q.4	The element which is required as an activator during Nitrogen metabolism is_____.	Mo	Application
Q.5	The root nodules of leguminous plants contains an oxygen scavenger called _____.	Leg-haemoglobin	Knowledge
Q.6	The nitrite is oxidised to nitrate with the help of bacterium _____during Nitrification.	Nitrobacter	understanding
Q.7	The mode of nutrition in nitrifying bacteria is _____	Chemotrophic	Application
Q.8	Sodium and Silicon are _____ elements for higher plants.	Beneficial.	understanding
Q.9	Zinc is required in the synthesis of phytohormone_____.	Auxin	Knowledge

Q.10	Rhizobium forms nodule in the _____part of the root anatomy.	Cortex	Application

Match the Following

Q.No	Question		Answer		Typology
Q.1	Column A a.Hydroponics were demonstrated by b.Nuclear sites plants contain	Column B i)Haeckel ii)Strontium iii)Selenium iv)Julius Von Sachs	Column A a. b.	Column B iv) ii)	Knowledge
Q.2	Column A a.Chlorophyll b.ATP	Column B i)Phosphorus ii)Sodium iii)Magnesium iv)Potassium	Column A a. b.	Column B iii) i)	knowledge
Q.3	Column A a.Photolysis of water b.Cell Division	Column B i)Calcium ii)Copper iii)Boron iv)Manganese	Column A a. b.	Column B iv) i)	Application
Q.4	Column A a.Necrosis b.Chlorosis	Column B i)Iron ii)Sodium iii)Copper iv)Chlorine	Column A a. b.	Column B iii) i)	Application
Q.5	Column A a. Appearance of brown spots b.Delay flowering	Column B i)Na Toxicity ii) Mo deficiency iii)Mn Toxicity iv)Silicon deficiency	Column A a. b.	Column B iii) ii)	Understanding

Q.6	Column A a.Slow uptake of ions through inner space b.Outward movement of ions	Column B i) Apoplast ii) Symplast iii) Endocytosis iv)Efflux	Column A a. b.	Column B ii) iv)	Understanding
Q.7	Column A a.Mineral translocation b.Phytohormones	Column B i)cortex ii)Phloem iii)Xylem Sap iv)Pith	Column A a. b.	Column B iii) ii)	Application
Q.8	Column A a.Nitrogen fixation b.Nitrification	Column B i)NH_3 to NO_3 ii)N_2 to NO_3 iii)N_2 to NH_3 iv)NH_3 TO NH_4	Column A a. b.	Column B iii) i)	Understanding
Q.9	Column A a.Nitrogen fixation b. Denitrification	Column B i)Brown Algae ii)Prokaryotes iii)Pseudomonas iv)Red Algae	Column A a. b.	Column B ii) iii)	Knowledge
Q.10	Column A a.Glutamine b.Aspartic Acid	Column B i)Amino Acid ii)Monosaccharide iii)Amide iv)Fatty Acid	Column A a. b.	Column B iii) i)	Application