

DPP

DAILY PRACTICE PROBLEMS

Class : XIth
Date :

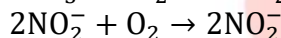
Solutions

Subject : BIOLOGY
DPP No. : 1

Topic :- Mineral Nutrition

- 1 (b)
The fixation of nitrogen in root nodules of legumes takes place in the presence of the enzyme 'nitrogenase'. This enzyme is an enzyme complex consisting of two components called as protein-1 and protein-2. The active nitrogenase complex contain protein-1 and protein-2 components in the ratio of 1:2.

- 2 (c)
Ammonia produced by the degradation of manures and organic matter may not be available to plants because it is readily leached from soil. It is converted to nitrate with the help of certain microorganisms, i.e., called nitrification (the used bacteria, nitrifying bacteria).



Ammonia is first oxidized to nitrite by the bacteria *Nitrosomonas* and/or *Nitrosococcus*.

The nitrite is further oxidized to nitrate with the help of bacterium *Nitrobacter*.

- 3 (c)
Some plant species accumulate selenium, some others gold, while some plants growing near nuclear test sites take up radioactive strontium

- 4 (b)
Functions of Cl⁻ It helps photolysis of water, maintenance of solute concentration and ionic balance.

Function of K Potassium plays an important role in the opening and closing of stomata. These both can alter the osmotic potential of a cell

- 5 (b)
An air pump used in conjunction with an air stone is an excellent way to dissolve oxygen in the nutrient solution

- 6 (c)
An ideal pH range for most hydroponic crops is between 5.5 and 6.5.

It is important because it affects the availability and absorption of several of the 16 atomic elements needed for the plant growth

7 (d)

Functions of Fe It is involved in the transfer of electrons like ferredoxin and cytochromes. It is reversibly oxidised from Fe^{2+} and Fe^{3+} during electron transfer. It activates catalase enzymes and is essential for the formation of chlorophyll

8 (d)

All of the above

9 (b)

Essential element has following features:

1.It is indispensable for the growth of plants.

2.Cannot be replaced by any other element.

3.Absence/deficiency produces disorders.

4.Has nutritive value.

5.Necessary for completion of vegetative or reproductive phase.

6.These are- C, H, O, N, P, K, S, Mg, Ca, Fe, B, Mn, Cu, Zn, Mo and Cl.

10 (d)

Essential elements performs several functions. They participate in various metabolic processes in the plant cells, such as permeability of the cell membrane, maintenance of osmotic concentration of the cell sap, electron transport systems, buffering action, enzymatic activities and acts as a major constituents of macromolecules and coenzymes

11 (d)

All **lead, cobalt** and **uranium** causes harmful effects.

12 (a)

Nitrogen is mainly absorbed in the form of nitrate from soil

13 (b)

In the initial phase, ions are taken up rapidly

14 (d)

The prominent symptoms of manganese toxicity is the appearance of brown spots surrounded by chlorotic veins.

It is important to know that manganese competes with iron and magnesium for its uptake by the plants and with magnesium for its binding with enzymes.

Manganese also inhibits calcium translocation in shoot apex. Therefore, excess of manganese may induce deficiencies of iron, magnesium and calcium

15 (c)

Plant obtains sulphur in the form of sulphate (SO_4^{2-}). Sulphur is present in two amino acids-cysteine and methionine and is the main constituent of several



- coenzymes, vitamins and ferredoxin
- 16 **(a)**
The EBB and flow system work by temporarily flooding the grown tray with nutrition solution and then draining the solution back into the reservoir
- 17 **(d)**
Hydroponics has been successfully employed as a technique for the commercial production vegetables such as tomato, seed less cucumber and lettuce
- 18 **(b)**
For the uptake of ions in the second phase, the pathway followed is called active uptake
- 19 **(a)**
17 element are essential for the plant growth
- 20 **(c)**
Utricularia or bladderwort is an insectivorous submerged aquatic plant. In which the rootless floating stem bears highly dissected leaves. A portion of leaf is modified into sac, like bladders of about 1.3 mm in diameter. Each bladder is guarded by a small valve which opens inwardly. Small insects flow into the bladder with water, but cannot come out due to the volve.

ANSWER-KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	B	C	C	B	B	C	D	D	B	D
Q.	11	12	13	14	15	16	17	18	19	20
A.	D	A	B	D	C	A	D	B	A	C