



# PARISHRAMA NEET ACADEMY

## TARGET NEET - 2022

### BIOLOGY

#### TOPIC: MINERAL NUTRITION

61. (1)

Micronutrients or trace elements are needed in very small amounts (less than 10 mmol kg<sup>-1</sup> of dry matter). These are 8 in number and include iron, manganese, copper, molybdenum, zinc, boron, chlorine and nickel.

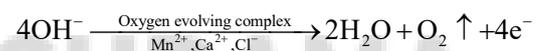
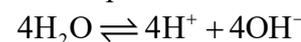
62. (1)

Potassium is absorbed from soil as potassium ions. It helps to maintain an anion cation balance in cells and is involved in protein synthesis, opening and closing of stomata, activation of enzymes and maintenance of cell turgidity.

63. (3)

Oxygen is evolved during photosynthesis by the process of photolysis of water taking place in the membranes of grana thylakoids. The phenomenon of breaking up of water into hydrogen and oxygen in the illuminated chloroplasts is called photolysis or photocatalytic splitting of water. Light energy, an oxygen evolving complex (OEC) and electron carrier are required for this process. Oxygen evolving complex is attached to the inner surface of thylakoid membrane and the enzyme has four Mn ions. Light energised

changes in Mn (Mn<sup>2+</sup>, Mn<sup>3+</sup>, Mn<sup>4+</sup>) remove electrons from OH<sup>-</sup> component of water forming oxygen. Liberation of O<sub>2</sub> also requires two other ions, Ca<sup>2+</sup> and Cl<sup>-</sup>.



64. (2)

65. (2)

Copper is a micronutrient, i.e., required by the plants in very small amounts. It is a component of cytochrome oxidase, RuBP carboxylase, plastocyanin and other enzymes. It helps in maintaining carbohydrate / nitrogen balance, chlorophyll synthesis. Its deficiency causes various diseases and "die back" is one of them. Die back is killing of shoot apex (stem tip and young leaves).

66. (1)

Magnesium (Mg) is a macronutrient.

67. (3)

Both calcium (Ca) and potassium (K) are macronutrients, essential for plant growth. Potassium is not the constituent of any metabolically important compound but it is an activator of many enzymes involves

in photosynthesis and respiration. This mineral is also a major contributor to the osmotic potential of cells and therefore their turgor pressure. Potassium ion ( $K^+$ ) a cation involved in cation exchange. Most calcium plants is in central vacuoles and bound in cell walls pectate polysaccharides. In vacuoles, calcium is frequently precipitated as crystals of oxalates. Calcium is necessary for formation of mitotic spindle during cell division.

68. (2)

Magnesium is a constituent of the ring structure of chlorophyll and helps to maintain the ribosome structure as it is required for binding two subunits of ribosomes.

69. (3)

70. (4)

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