



PARISHRAMA NEET ACADEMY

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BIOLOGY

TOPIC: TRANSPORT IN PLANTS

41. (2)
Water is present in the soil in five forms capillary water, gravitational water, hygroscopic water, combined water and water vapours. Capillary water is the water present in soil in narrow spaces or micropores of soil. The amount of capillary water which can be present in a soil depends upon the abundance of micropores. Capillary water is held in the soil by capillary forces. It, therefore, does not fall down to water table by gravity. Only capillary water is available to plant roots for absorption.
42. (4)
The water molecule is polar, that is, it has an uneven charge distribution on it. Hydrogen bonding of several water molecules forms a three dimensional lattice structure. Attraction and bonding of similar molecules as of water is called cohesion. In addition to bonding readily to themselves (cohesion), water molecules bind to the molecules of many polar compounds. This is called adhesion. Hydrogen bonds give water molecules a good power of cohesion and adhesion.
43. (1)
The loss or excretion of water in the form of liquid droplets from the leaves and other parts of an uninjured or intact plant is called guttation. The guttate liquid is never pure water. It contains both organic and inorganic solutes. Guttation takes place through special structures called hydathodes usually found on margins and tips of the leaves.
44. (3)
Root pressure is positive pressure that develops in the xylem sap of the root of some plants. It is manifestation of active water absorption.
45. (2)
Transpiration is the evaporative loss of water by plants. It is a necessary evil. It has more than one purpose creates transpiration pull for absorption and transport of plants, aids in transporting water and minerals from the soil to all parts of the plant, cools leaf surfaces by evaporative cooling, maintains shape and structure of the plant by keeping cells turgid. Measurements reveal that the force generated by transpiration can create pressure sufficient to lift a xylem column of water over 130 meters high.

46. (1)
Malic acid is formed by hydrolysis of starch. Its accumulation results in closure of stomata. When malic acid dissociates and form potassium malate (osmotically active) in guard cells, stomata opens. Aspartic acid, phosphoenol Pyruvic acid, oxaloacetic acid are intermediates of Kreb's cycle.
47. (1)
According to mass flow hypothesis, as the hydrostatic pressure in the phloem sieve tube increases, pressure flow begins, and the sap moves through the phloem.

48. (4)
49. (1)
50. (2)
When turgidity increases within the two guard cells flanking each stomatal aperture or pore, the thin outer wall bulge out and force the inner walls into a crescent shape. This results in the opening of stomata. The opening of stomata is also aided by the radial orientation of cellulose microfibrils in the cell wall of guard cells rather than longitudinal orientation.



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