GIRLS HIGH SCHOOL AND COLLEGE -PRAYAGRAJ

WORKSHEET –NO 2

SESSION 2020-2021

CLASS-8- A,B ,C ,D, E.

SUBJECT -BIOLOGY

NOTE –Parents are expected to ensure that the student takes reference from a book or the internet and thereafter answer the given questions.

Note : Book- Srijan ICSE Biology Class 8 by Veer Bala Rastogi.

Website :byjus.com/icse-class-8-biology-selina-solutions-chapter-1-transportation-in-plants/

Youtube Link:https:youtu.be/gyO1qnqpr2E

TOPIC: TRANSPORT OF WATER AND MINERALS IN PLANTS

The transport of water and minerals in plants occurs at three levels.

1) Absorption of water and minerals by individual cells that is from soil by root hair.

2) Short distance transport that is cell to cell movement of water through cortex of root .

3) Long distance transport or conduction of water through plant body or ascent of sap(the upward movement of water and minerals from root to top of plant).

ABSORPTION OF WATER AND MINERALS IN PLANTS BY ROOT HAIRS

A root hair is an extension of the epidermal cell of the root. It is covered with a very thin semipermeable cell membrane and is filled with cell sap. Cell sap is watery liquid contained in the vacuole of the cell.

ADAPTATIONS IN ROOT HAIRS FOR WATER ABSORPTION

The root hairs are specially adapted for absorption of water,because

- Semipermeable membrane of unicellular root hair permits water and mineral molecules to enter into the cell sap but does not allow them to come out .
- Cell sap in root hairs has higher salt concentration than the surrounding soil water .
- Large vacuole can absorb much water
- The root hairs provide a large surface area for absorption.

METHODS OF ABSORPTION

Root hairs absorb water by diffusion and osmosis and minerals by active transport.

1) DIFFUSION: Diffusion is the movement of molecules from higher concentration to the region of lower concentration without using any energy.This is also called passive transport

2)OSMOSIS: Diffusion of solvent molecules through a semipermeable membrane from the region of its higher concentration to the region of its lower concentration is called osmosis.

3) ACTIVE TRANSPORT: The transport of molecules and ions against the concentration gradient by using energy is called active transport.

Answer the following questions -

Q.1) Fill in the blanks .

1)The upward movement of water and minerals from roots to top of plant is called_____

2) A root hair is an extension of the _____ cell of the root.

3) Cell sap is a watery liquid contained in the _____ of the cell.

4) _____ in root hairs has higher salt concentration than the surrounding soil water .

5) The root hairs provide a_____ surface area for absorption .

Q.2) How are root hairs adapted for water absorption?

Q.3) What is Active transport?

Q.4) Define the following.

a) Diffusion

b) Osmosis

Q.5)Draw a diagram showing the process of diffusion.

 THE END