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SUBJECT:BIOLOGY

CHAPTER:6

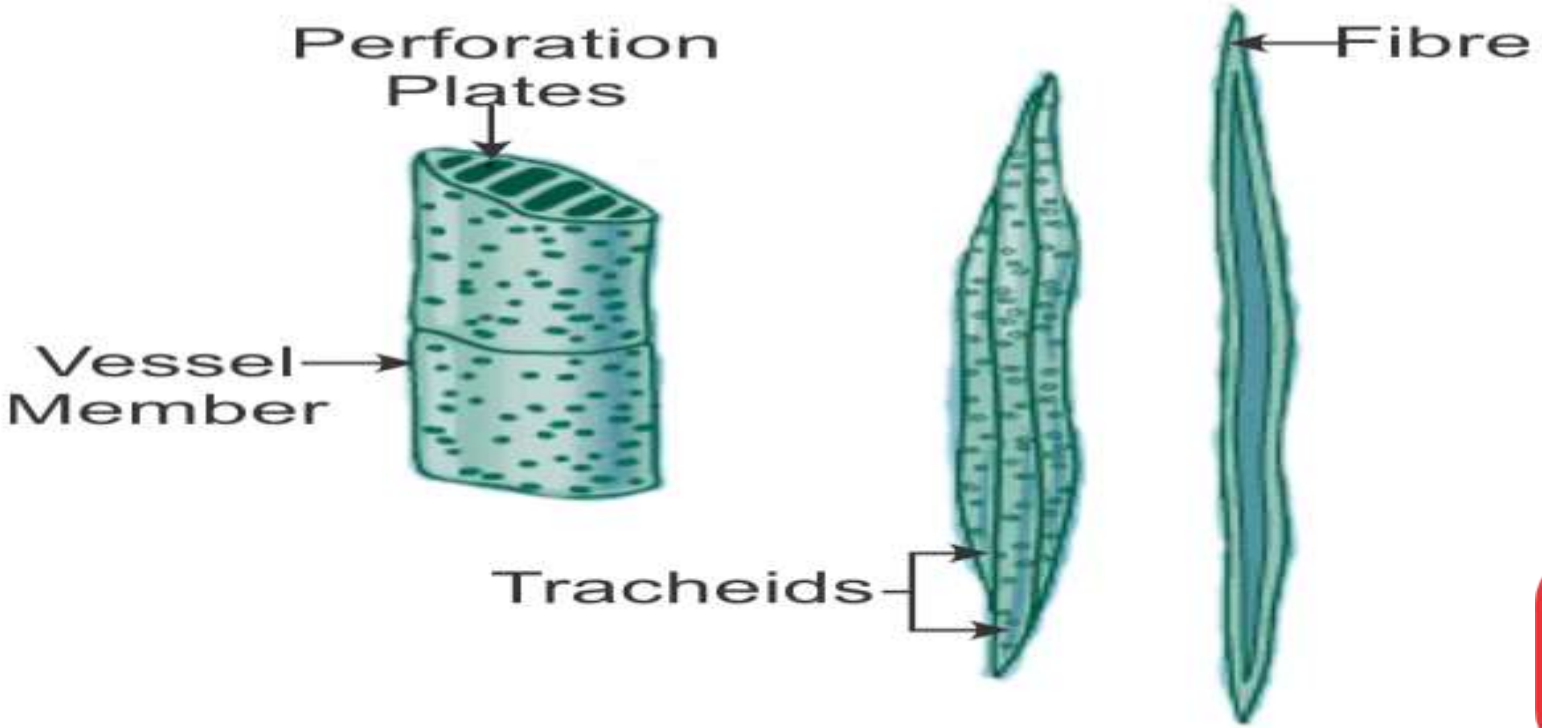
CHAPTER NAME: LIFE PROCESSES.

PERIOD-9

TRANSPORTATION IN PLANTS

- Plants have specialized vascular tissues for transportation of substances. There are two types of vascular tissues in plants, viz. xylem and phloem.
- Xylem: Xylem is responsible for transportation of water and minerals. It is composed of trachieds, xylem vessels, xylem parenchyma and xylem fibre. Trachieds and xylem vessels are the conducting elements. The xylem makes a continuous tube in plants which runs from roots to stem and right up to the veins of leaves.

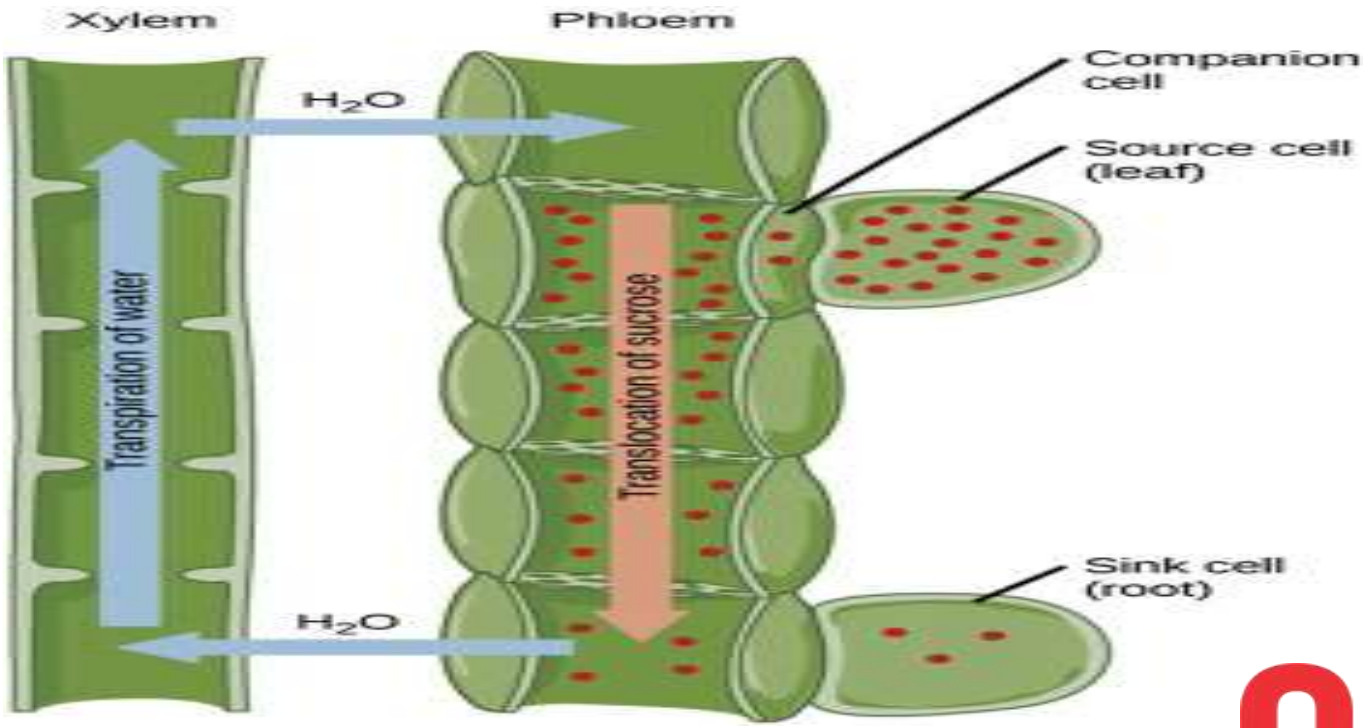
Xylem



Phloem

- Phloem: Phloem is responsible for transportation of food. Phloem is composed of sieve tubes, companion cells, phloem parenchyma and bast fibres. Sieve tubes are the conducting elements in phloem.

Phloem



Ascent of sap

- Ascent of SapThe upward movement of water and minerals from roots to different plant parts is called ascent of sap. Many factors are at play in ascent of sap and it takes place in many steps. They are explained as follows:

- https://www.youtube.com/watch?v=cnk3BJDBqIo

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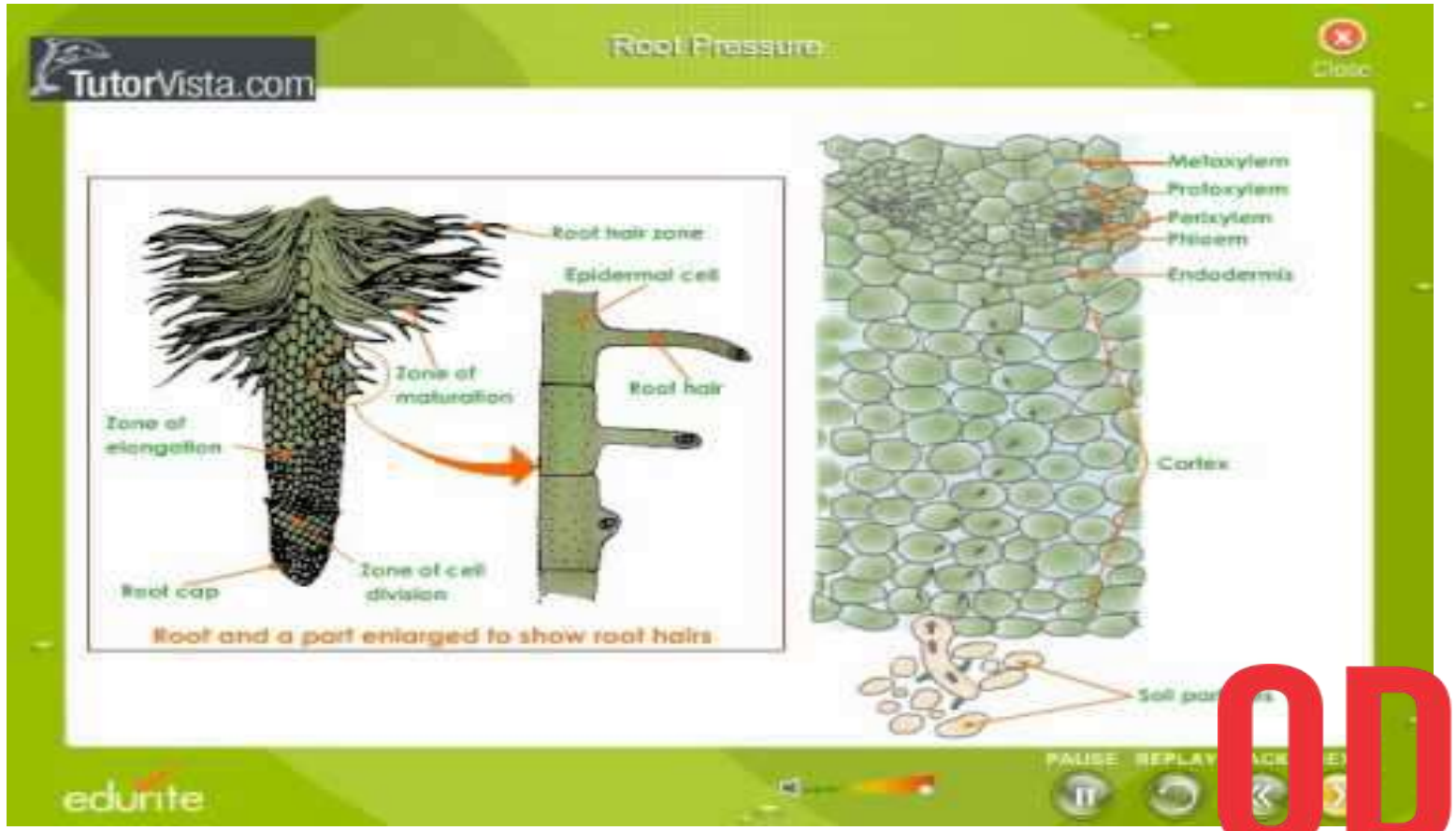
Root pressure

- Root Pressure: The walls of cells of root hairs are very thin. Water; from soil; enters the root hairs because of osmosis. Root pressure is responsible for movement of water up to the base of the stem.

Root pressure



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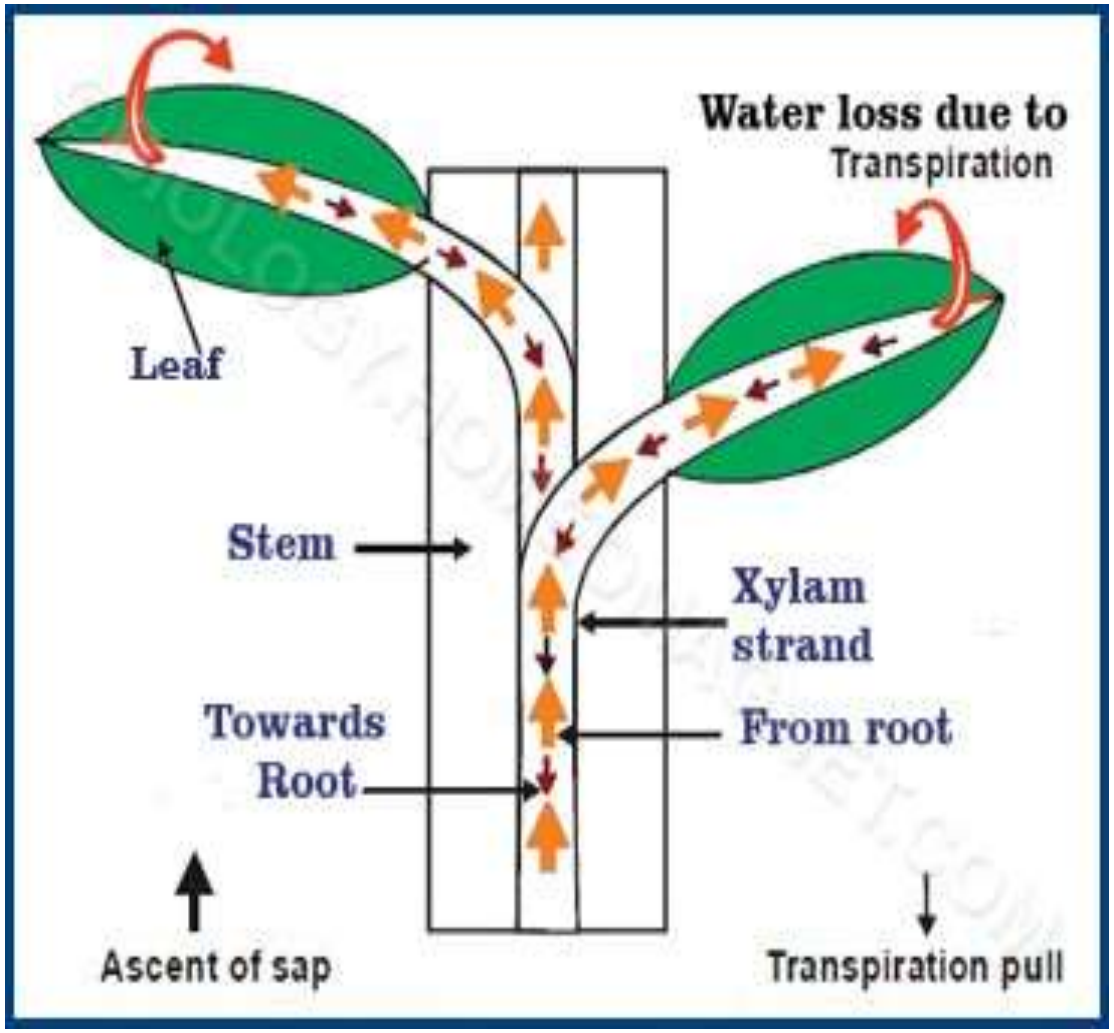
Transpiration pull

- Transpiration Pull: Loss of water vapour through stomata and lenticels; in plants; is called transpiration. Transpiration through stomata creates vacuum which creates a suction; called transpiration pull. The transpiration pull sucks the water column from the xylem tubes and thus water is able to rise to great heights in even the tallest plants.

Transpiration pull



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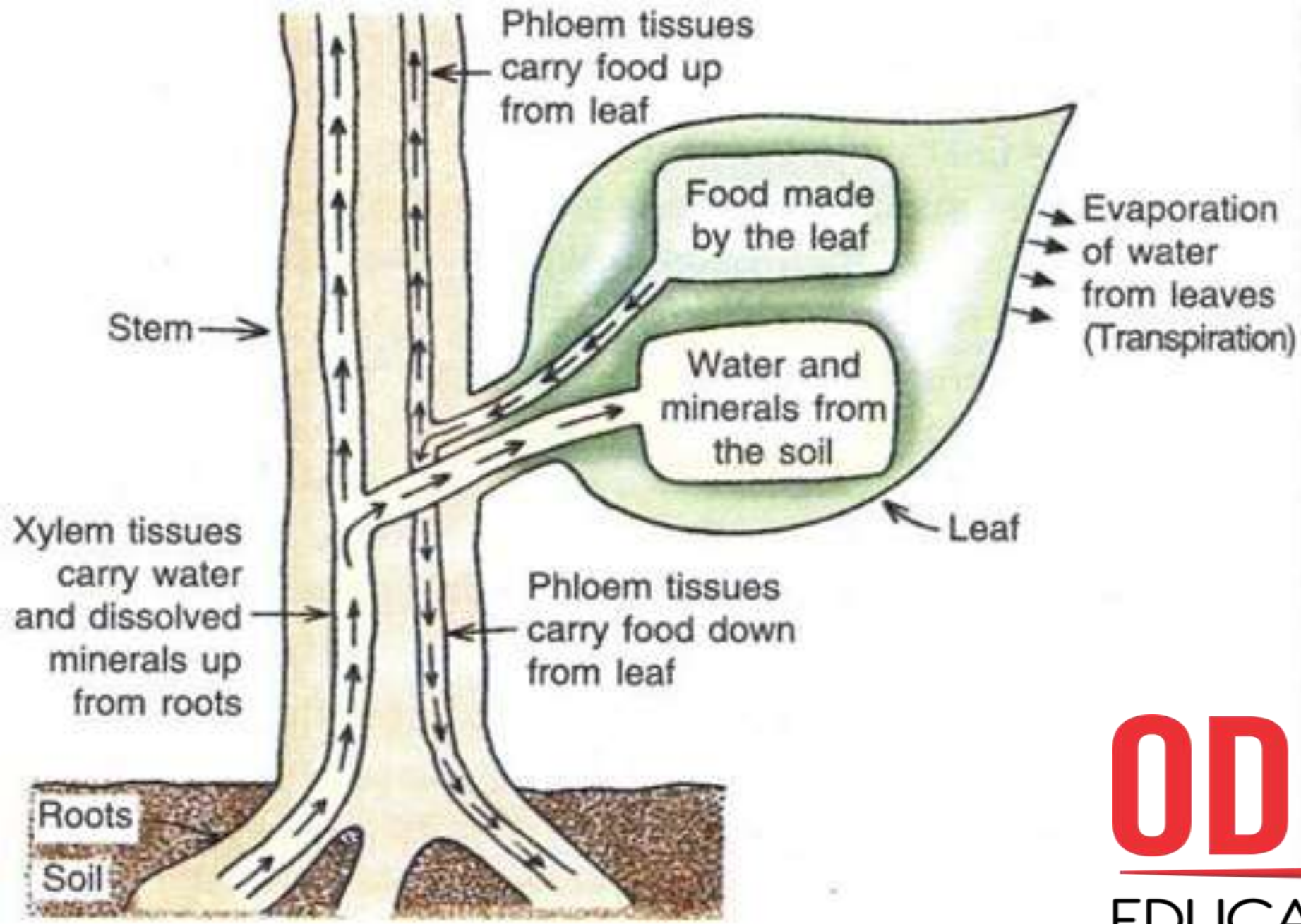
Transport of food

- Transport of Food: Transport of food in plants happens because of utilization of energy. Thus, unlike the transport through xylem; it is a form of active transport. Moreover, the flow of substances through phloem takes place in both directions, i.e. it is a two-way traffic in phloem.



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HOME ASSIGNMENTS

- In box Question - 3,4 Pg No- 110 and Exercise Question No-12

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THANKING YOU

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