

Distinguish, differentiate, compare and explain what is the main difference between Active and Passive absorption.

## **Difference between Active and Passive absorption**

1. In the active absorption, the force for absorption of water is generated in the cells of a root itself. In passive absorption, the force for absorption of water is created in the mesophyll cells.
2. Osmotic and nonosmotic forces are involved in water absorption in active. Water is absorbed due to transpiration pull in passive.
3. Water is absorbed according to DPD changes in active. Water is absorbed due to the tension created in xylem sap by transpiration pull in passive.
4. In the active absorption, water moves through symplast. In passive absorption, water moves mainly through apoplast.
5. The rate of absorption is not affected significantly by temperature and humidity in the active. Its rate is significantly affected by all those factors which influence the rate of transpiration in passive.
6. In the active, metabolic inhibitors if applied in root cells decrease the rate of water absorption. In passive, no effect of metabolic inhibitors if applied in root cells.
7. Active absorption occurs in slow transpiring plants which are well watered. Passive absorption occurs in rapidly transpiring plants.
8. In the active, the rate of absorption is slow as compared to passive absorption.