1. The concept of \_\_\_\_\_\_\_\_\_\_\_\_\_\_, that is separation of substances between two solutions colloidal and true solution by use of \_\_\_\_\_\_\_\_\_ membrane.

2. \_\_\_\_\_\_\_\_\_\_\_ groups like (OH, CHO, CO, COOH, NH2, CONH2, SH**)** \_\_\_\_\_\_\_\_\_ the permeability, while Increases the length of carbon chain \_\_\_\_\_\_\_\_ polarity and increase solubility and consequently \_\_\_\_\_\_\_\_ permeability.

**3.** the permeability rates\_\_\_\_\_\_\_\_\_ with **Temperature** increasing, but increase the (T) more than (60C) called **\_\_\_\_\_\_\_\_\_\_\_,** in this case the cell membranes become \_\_\_\_\_\_\_\_\_\_\_\_\_.

4.\_\_\_\_\_\_\_\_\_\_\_ pressure lead to produce liquid droplets on the edges of the plant leaves, this phenomenon is known as \_\_\_\_\_\_\_\_\_\_\_ , it’s appear when the transpiration rate is low and humidity is high, such as during the night

**5. Factors affecting dialysis rate\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_.**

* When the transpiration occurs in the leaves, losses of water molecules through the stomata, develops a large \_\_\_\_\_\_\_\_\_\_ pressure (low water potential), and they pull other water molecules by cohesion force, water molecules are also attracted to the sides of the tracheids and vessels by adhesion force.

**Hypotonic solution** (less – tention solution ) contains a lower concentration of dissolved (solutes) substances than the cell

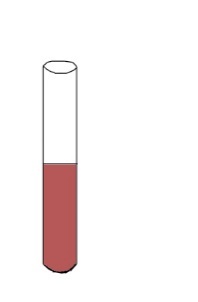
**Hyper tonic solution** (more-tention solution ) contains a higher concentration , of solutes than the cell placed in it

**An experiment explain the effect of (o.p)for the external solution on the rate of absorption.**

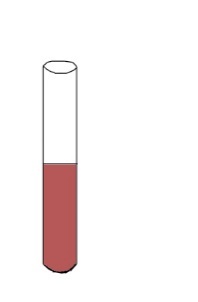
Factor affecting on water absorption ?

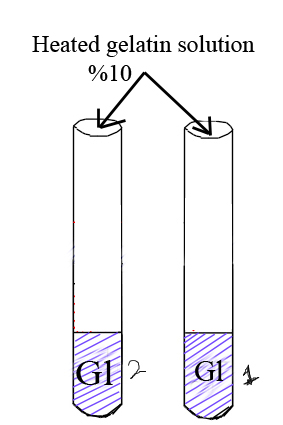
Difference between active absorption and passive absorption ?

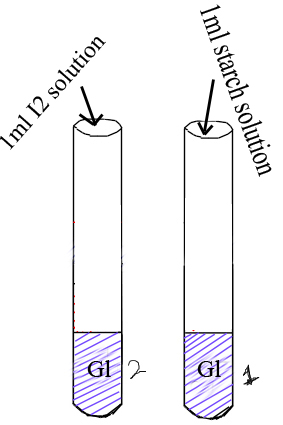
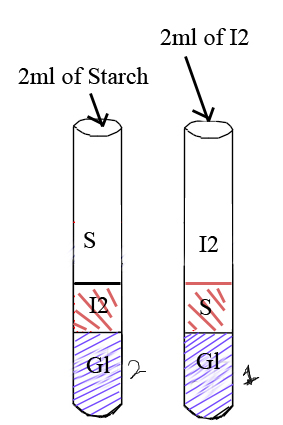
From epidermis to endoderm there are two path ways in which water can flow

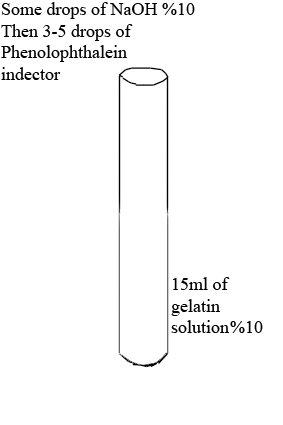
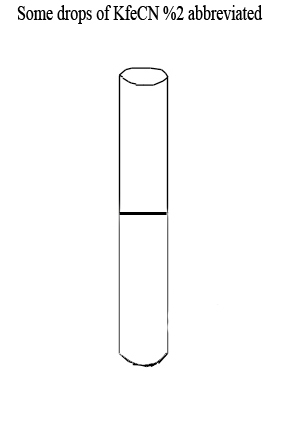
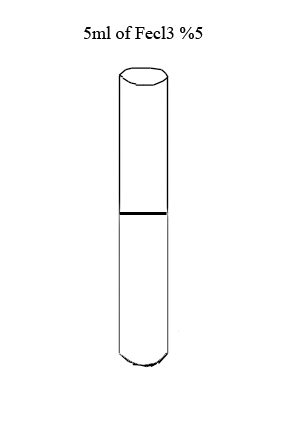


3ml of external water + some drops of I2 indictor colorless proof to the nonexistence of starch because starch with I2 gives the blue color



 3ml of external water + some drops of AgNO3 precipitation or formation white component of AgNO3 proof to the presents of Cl- ions.



The biological importance of osmosis includes:

* That’s means osmosis required :

1. Water potential gradient .
2. Semi permeable or partially permeable membrane

solution(1) Nacl 80% Nacl 20%solution (2)

(less) lower solvent ← more solvent

(more) high solute ← less solute

Solvent molecules

high osmotic pressure ← low(O.P)

