

**Question 1: Choose the correct answer :**

**(30 marks)**

- 1- polar      2- **all**      3- **force**      4- **potometer**
- 5- cohesion      6- humidity      7- hypertonic      8- ether
- 9- **adherence**      10- **ascent of sap**      11- gravity      12- **hydrophilic**
- 13- **oxygen**      14- cell wal      15- Hbond      16- volume
- 17- H bond      18- **transpiration**      19- dense
- 20- **H bond**
- 21-- isotonic      22- extreme      23- adhesion
- 24- below
- 25- **osmotic**      26- 115°C      27- negligible      28-  
weather
- 29- permeable      30- osmotic potential      31- transpiration

**Question 3 : write the definition of : ( 18 marks )**

**1- hydrogen bond : the force result when attraction of the positive hydrogen atom of one water molecule for the negative oxygen atom of anther water molecule .**

**2- Diffusion : movement of substance from high concentration to low concentration.**

**3-- Imbibitions are a physical process mainly concerned with adsorption of water.**

**4- Osmosis movement of water from high concentration to low concentration.**

**5- Thistle tube used to demonstrated the osmotic process**

**6-**

**Question 4 : give reason : ( 28 marks )**

**1-The materials are readily wet because the water molecules have easy access to exposed oxygen atom on the surface.**

**2- The solvent action of water is an effect of its to ability form H-b-and asymmetrical distribution of charges.**

**3- because the adhesion between water molecule and the wall of the tube .**

**4-are not observed in conifers.**

**- Even in the absence of root pressure ascent of sap .continues.**

**5- Imbibitions are a physical process mainly concerned with adsorption of water.**

**6- Due to the presence of hydrophilic or lyophilic colloids inside them through the submicroscopic capillaries present on their general surface of the body**

**7- Due to increased movement of the air around a plant**