

**PLANT PHYSIOLOGY**

**Q1:**

- 1- **Define:** - a- Osmosis      b- Respiration      c- Tyndall phenomenon.
- 2- Compare between true solution and colloidal system.
- 3- What is the diffusion and mention the important role in the plant.

**Q2:      Choose the correct answer:**

- 1- Jellies dispersed in (gas in solid – liquid in solid – solid in solid).
- 2- Brownian movement is shown more clearly by (hydrophobic – hydrophilic – true solution).
- 3- The osmotic pressure of plant cell (decrease – increase – not affected) when water drawl from the cell sap.
- 4- Hydrophobic sol (can – can not) be converted into colloidal state again after precipitated.
- 5- The end products of aerobic respiration in plants are [(CO<sub>2</sub>+H<sub>2</sub>O+E), (H<sub>2</sub>O+E), (CO<sub>2</sub>+E), (CO<sub>2</sub>+H<sub>2</sub>O)].
- 6- pH value at which flocculation is complete is known as (compensation point – isoelectric point – extinction point).
- 7- Plasma membranes are considered to be (permeable membrane – impermeable membrane – selective permeable membrane).
- 8- Starch swell when placed in water because of (osmosis – imbibitions – hydrolysis – none).
- 9- High conc. Of acid (decrease – increase – does not effect) the permeability of the plant cell to water.
- 10-      When the humidity of the atmosphere decrease, the osmotic pressure of the leaves cell (increase – decrease – not affect).

**With best wishes**

## Answer Exam.

**Q1:**

**1- Define: -**

**a- Osmosis:**

Is the spontaneous net movement of solvent molecules through a partially permeable membrane into a region of higher solute concentration, in the direction that tends to equalize the solute concentrations on the two sides

**b- Respiration:**

1. The process in living organisms of taking in oxygen from the surroundings and giving out carbon dioxide (external **respiration**).
2. The chemical breakdown of complex organic substances, such as carbohydrates and fats, that takes place in the cells and tissues of animals and plants, during which energy is released and carbon dioxide produced (internal **respiration**)

**c- Tyndall phenomenon.**

The phenomenon in which light is scattered by particles of matter in its path. It enables a beam of light to become visible by illuminating dust particles,

**2-Compare between true solution and colloidal system.**

<b>True solution</b>	<b>Colloidal systems</b>
1.Dispersed particles are molecules or ions	Dispersed particles are aggregation of molecules.
2.Diameter of particles is less than 0.001 micro	Diameter of particles is ranges between 0.001 and 0.1 micro
3.they are stable.	they are relatively stable
4.particles can not be seen by any optical system.	particles can be seen by an ultra microscope.

### **3-What is the diffusion and mention the important role in the plant.**

The passive movement of molecules or particles along a concentration gradient, or from regions of higher to regions of lower concentration.

- i. It is an essential process in exchange of gases ( $O_2$  and  $CO_2$ ) during respiration and photosynthesis.
- ii. Uptake of minerals is also affected by the process of diffusion.
- iii. It helps in removal of excess water by the process of transpiration.
- iv. Translocation of organic solutes also takes place by diffusion means.
- v. Fragrance of flowers or sweet scent emitted by flowers spread in air by diffusion means attracts insects to materialize pollination.

### **Q2: Choose the correct answer:**

- 1- liquid in solid
- 2- hydrophobic
- 3- increase
- 4- can not
- 5- ( $CO_2+H_2O+E$ )
- 6- Isoelectric point
- 7- selective permeable membrane
- 8- imbibitions
- 9- increase
  
- 10- increase