

KEY

Forces that Move Plants and Homeostasis Review

From your Forces that affect Plant Movement Notes:

1. Describe germination.

Germination is the process by which a plant emerges from a seed. Root first and then the shoot which turns in to the stem.

2. Describe Turgor pressure.

Turgor Pressure is the pressure exerted on a plant cell wall by water passing into the cell by osmosis.

Osmosis is the process that causes a liquid (especially water) to pass through the wall of a living cell.

3. Describe why osmosis is important.

Osmosis allows plants to put water in their cells and increase Turgor pressure to stand up straight.

4. What are the 6 different tropisms and the stimulus that causes them?

Phototropism - Light

Geotropism (Gravitropism) - Gravity

Thigmotropism - Touch

Hydrotropism - Water

Chemotropism - Chemicals

Thermotropism - Heat

5. What is the difference between positive and negative of any tropism?

If a plant moves towards a stimulus, then it has positive tropism. If a plant moves away from a stimulus, then it has negative tropism.

6. What is geotropism also known as?

Gravitropism

7. Which parts of a plant have positive geotropism and which have negative geotropism?

Stem – negative Roots - positive

8. Why do the stems and roots move the directions that they do? (What do they get for moving that way)

Stems must grow up to get out of the soil and reach sunlight.

Roots must grow down to find water and nutrients in the soil.

9. Why do plants typically move toward light?

The plants need light to perform photosynthesis and create their food.

10. Why does chlorophyll not get produced until the plant is in light?

Chlorophyll is the green pigment that absorbs sunlight. The plant will not produce chlorophyll until there is sunlight to save energy.

11. Give an example of positive thigmotropism and negative thigmotropism.

Positive – Venus Flytrap – moves towards the fly touching it.

Negative – Mimosa (Sensitive Plant) – folds up when touched.

12. What is the importance of hydrotropism?

Roots must find water for the plant to survive. They will move toward any water source in the soil even if it is not in the direction of the positive geotropism that roots normally move with.

From your Homeostasis Notes:

13. Describe homeostasis.

Homeostasis is the ability or tendency of an organism or cell to maintain internal equilibrium by reacting to internal stimuli.

14. Describe what an internal stimulus is.

Internal Stimuli are things that happen inside an organism that cause the organism to react.

15. Describe what equilibrium is.

Equilibrium is when all the conditions of a system which are competing influences are balanced.

16. What is the job of the receptor?

Receptor – a sensor that gathers information about a particular environmental change or stimulus.

17. What is the job of the control center?

Control Center – receives and processes information gathered by the receptor, then makes a plan of action.

18. What is the job of the effector?

Effector – a cell or organ that follows the commands of the control center to oppose or enhance the original stimulus.

19. Contrast negative and positive feedback.

Negative feedback reduces the output of an organ or organ system.

Positive feedback enhances or accelerates the output of an organ or organ system.

20. Why do plants wilt?

Wilting is a plant becoming limp through heat, loss of water, or disease.

21(A). What is a plant's response to wilting?

The plant's response to the stimulus is to increase turgor pressure through osmosis.

21(B). Geotropism explains which of the following phenomena?

B. A seed is planted upside-down, but the roots still grow in the direction of gravity.

22. Roots grow downward in the soil in response to -

A. gravity.

23. When a plant wilts due to lack of water, it is responding to which of the following internal stimuli?

A. Decreased water pressure within the plant cells

24. Turgor pressure can help plants move. Internal water pressure can cause -

A. a wilted stem to return to an upright position.

25. Geotropism is a force that affects certain organisms. This force will result in which of the following?

B. The roots of a plant to grow downward