**Chpt 36 cont’d, Group Exercises**. Chpt 35 refresher.

1) How do the stomata function in transpiration regulation? When water flows in, are plant leaves more turgid or flaccid? Account for the change in water potential upon absorption and loss of potassium ions.

2) Explain and define 3 main routes for short-distance transport in a plant. List 3 key functions of the endodermis during transport. How would long distance transport of water be affected if vessel elements and tracheids were alive at maturity?

3) Define and explain the following:

-Phloem sap

-Sugar source

-Sugar sink

-Guttation

-TCT (Transpiration-cohesion-tension) mechanism

-Wilting

-Plasmolysis

-Bulk flow and Pressure (positive)

4) Compare and contrast the forces that move phloem sap and xylem sap over long distance. Why can xylem transport water and minerals using dead cells, where as phloem requires living cells? Why does photosynthesis cease when leaves wilt?

5) Complete the following table.

Leaves:

|  |  |  |
| --- | --- | --- |
| **Modified Leaves** | **Function** | **Example** |
| Tendrils |  |  |
| Spines |  | Cactus |
|  | Store water |  |
| Bracts |  | Poinsettias |

Stems:

|  |  |  |
| --- | --- | --- |
| **Modified Stems** | **Function** | **Example** |
| Rhizomes |  |  |
| Bulbs | Store food | Onion |
|  | Asexual reproduction | Strawberries |
|  |  | potatoes |

Roots:

|  |  |  |
| --- | --- | --- |
| **Modified Roots** | **Function** | **Example** |
|  | support | maize |
|  | support | Strangler fig |
|  | support | Tall tropical trees (ceiba) |
|  |  | Mangroves (cypress trees) |