2.51 Phloem

Describe the role of phloem in transporting sucrose and amino acid between the leaves and other parts of the plant.

* Photosynthesis – produce glucose. Plants converts glucose to sucrose, which is a non reducing sugar (chemically less reactive than glucose)
* Amino Acids – transported with sucrose, when transported in soluble they combine to form sap. Sap travels through tissues called phloem.
* Sap should leave leaf, and be transported to the buds.
* Translocation is the process of where the sap is moved around
* Phloem have sieve plates where sap goes through

2.52 Xylem

Describe the role of the xylem in transporting water and mineral salts from the roots to other parts f the plant.

* Minerals will be dissolved in the water.
* Plant moves the water to the leaves and terminal bud.
* The tissue where the minerals and water move is called XYLEM
* It is a single direction, upwards to the plant
* In the water dissolved various mineral salts

2.53 Uptake of water

Explain how water is absorbed by root hair cells

* Root hairs have branches, which increases surface area.
* Hairs on roots: epidermal cells (on the surface of the root) – increases surface area for absorption of water
* Mechanism of which plants absorb water involves active transport against concentration gradient (transport minerals).
* Takes up water by osmosis
* Osmosis moves from dilute region to concentrated region

2.54 Transpiration

Recall that transpiration is evaporation of water from the surface of the plant

* For evaporation to occur: Liquid ----> gas which required heat, provided by sunlight.
* Transpiration is the evaporation of water from the surface of the plant
* Evaporation takes place in stomatal pores
* Not all sunlight that comes down is absorbed by chloroplast
* Just above the stomatal pore is where the phase change occurs

2.55 Rate of transpiration

Explain how the rate of transpiration is affected by changed in humidity, wind speed, temperature and light intensity

* Absorption of sunshine, which generates heats in to the gas phase in stromal pore.
* Concentration gradient for water vapor. If there was a big difference there would be a high rate.
* Factors that will cause a large difference is that if the humidity was low, if the wind blows away the water vapor, if temperature is high there will be more evaporation, high intensity: high rate of photosynthesis and water movement
* Low temperature will lead to low rates of evaporation which will result in to a small difference and low rate
* With low light intensity the rate of photosynthesis will be low and slow