Biology 213 **Review Questions 35, 36**

Questions from LIFE The Science of Biology
Ch.35: Self-Quiz 1,3,5,6,7.8,9,10 For Discussion 2,3,4
Ch. 36: Self-Quiz 1,2,3, 4, 5, 6, 7, 8,10 For discussion 1,2,3, 5

1) Zip up the xylem is probably a good way to remember the movement within the xylem but flow down the phloem is not always accurate. Why not?

2) When orchid fanciers reproduce orchids they call it meristeming. Do you suspect that they are producing orchids via sexual or asexual reproduction? How do you suspect they are producing more orchids?

3) Bags were placed over several leaves of a small poplar tree. In the middle of the day radioactive $^{14}CO_2$ was placed in one of the bags that surrounded a full-grown leaf. By the middle of that same night, very little $^{14}CO_2$ was detected in the original bag, but it was detected in a bag that covered a small, expanding leaf. Describe a possible route that the carbon followed in moving into the plant, from one leaf to another and then out of the plant. In describing a possible route include the names of tissues, cells and organelles. In what form (most likely form) did the carbon move. (To answer this correctly you may need to review the "big picture" of photosynthesis and respiratioin.)

4) Describe the process of rhizobial infection and nodule development in a legume root. When legumes are grown in soil that has excess nitrogen available it does not make root nodules. Why not?

5) You are leaving town for a week and want to keep your plants from wilting (and hopefully keep them alive) while you are gone. Name two things you can do to slow down water loss in your plant.

6) Soil is a much better reservoir for cations than anions, why?

7) What is a proton-pump? Describe three different processes that rely on the use of a proton-pump.

8) Name two symbiotic relationships that involve plant roots. Explain the purpose of each.

9) What sort of environmental condition(s) selects for carnivorous plants?

10) Explain the difference between the terms epiphyte, parasite and hemi-parasite.

11) What is the difference between organic and inorganic fertilizers? Why might one of these be a better long-term solution for adding nutrients but not always work as well in the short-term?