Name: _____ Question Set 24

CHAPTERS 10.4, 10.5, 35.1 – 35.3: Plant Regulation and Transport

1. Describe each of the following:

   a. solute potential - _____

   _____

   _____

   b. pressure potential - _____

   _____

   _____

   c. water potential - _____

   _____

   _____

2. How does solute potential affect osmosis?

_____

_____

3. What is bulk flow?

_____

_____

4. Can you explain what happens when you drop a piece of stem into pure water using the terms from question 1?

_____

_____

5. What does the proton pump accomplish in respect to membrane potential.

_____

_____

6. Explain how the proton pump moves cations and anions across the plant cell membrane.

_____

_____

_____

7. What is guttation and what do we usually call the results of it when we see it on an early spring/summer morning?

_____

_____

8. Explain the role of each in xylem transport:

   a. transpiration - _____

   _____

   _____

   b. cohesion - _____

   _____

   _____

   c. adhesion - _____

   _____

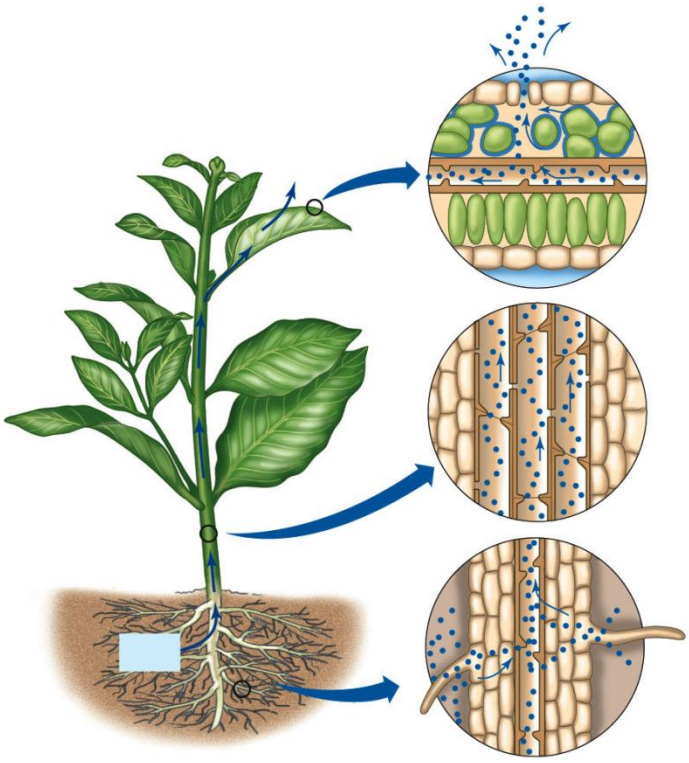
   _____

   d. tension - _____

   _____

   _____

9. Using **Figure 35.7** of your text, label the 8 key events of the transpiration-cohesion-tension mechanism of xylem transport.



10. What are the functions of guard cells and stomata?

_____

_____

11. Under what conditions do the mesophyll cells release abscisic acid and what is its effect?

_____

_____

12. What is the role of K+ ions in the functioning of the guard cells?

_____

_____