Name_____
Hour_____

Cells and Their Environment
Passive Transport

Read the passage below. Notice that the sentences are numbered. Answer the questions that follows.

[1]The diffusion of water through a selectively permeable membrane is called **osmosis**. [2]Like other forms of diffusion, osmosis involves the movement of a substance - water - down its concentration gradient. [3]Osmosis is a type of passive transport.

[4]If the solutions on either side of the cell membrane have different concentrations of dissolved particles, they will also have different concentrations of "free" water molecules. [5]Osmosis will occur as water molecules diffuse into the solution with the lower concentration of free water molecules.

Read each question and write your answer in the space provided.

1. What Key Term is defined in this passage? What does this term mean?

2. How are diffusion and *osmosis* related?

3. What does the word *water* in Sentence 2 tell you about *osmosis*?

_____4. Osmosis is a type of
   a. passive transport.
   b. diffusion.
   c. active transport.
   d. Both (a) and (b).

Complete the table by checking the correct column for each statement.

	Statement	Isotonic Solution	Hypotonic Solution	Hypertonic Solution
5.	The concentration of dissolved substances outside the cell is lower than inside the cell.			
6.	When a cell is placed in this solution, water will enter the cell by osmosis, resulting in turgor pressure.			
7.	The concentration of dissolved substances outside the cell is the same as the concentration inside the cell.			
8.	The concentration of dissolved substances outside the cell is higher than the concentration inside the cell.			
9.	When injected into the body, it will not cause cellular damage because no osmosis occurs.			
10.	Putting a plant cell in this type of solution will result in a loss of water, and a drop in turgor pressure (or plasmolysis), which will cause the plant to wilt.			

Answer the following questions.

11. In a hypotonic solution, what type of pressure exists in a cell as the result of osmosis? What is the effect of this pressure on non-woody plants?

12. What happens to a plant when it is deprived of water or placed in a hypertonic environment?