

Osmosis and Diffusion Practice

Name: _____

Period: _____

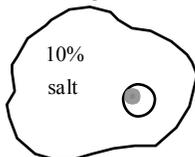
I. Based on what you've learned, in your own words, answer the following questions regarding movement of materials through a cell membrane.

1. What does semi-permeable mean?
2. What is the net movement of molecules from high to low concentrations?
3. What is the term for the diffusion of water?
4. What does homeostasis mean?
5. What is a hypertonic solution?
6. What is a hypotonic solution?
7. What is an isotonic solution?

II. Observe the diagrams in the table below. Assume that the dots are dissolved particles on either side of the cell membrane. They are like oxygen molecules that can go across the membrane. Do the following situations represent concentration gradients? If so, in which direction would diffusion occur?

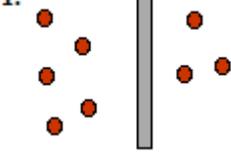
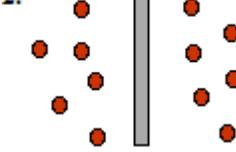
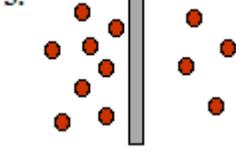
gradient? Yes or No		gradient? Yes or No		gradient? Yes or No?	
movement left, right, or none		movement left, right, or none		movement left, right, or none	

III. Observe the diagram below and answer the questions.



1. Can you tell if the cell is in a hypertonic, hypotonic, or isotonic solution? **EXPLAIN!**
2. What will happen to the cell if it is placed in a 50% salt solution?
3. What will happen if the cell is placed in distilled water?

IV. Observe the diagrams in the table below. Assume that the dots are dissolved particles (like protein or carbohydrate molecules) on either side of the cell membrane. Do the following situations represent concentration gradients? If so, in which direction would osmosis occur?

1. 		2. 		3. 	
gradient? Yes or No		gradient? Yes or No		gradient? Yes or No?	
movement left, right, or none		movement left, right, or none		movement left, right, or none	

V. Observe the table below. Are the following hypotonic, hypertonic, or isotonic solutions? Which way will water mostly move? (some situations may have water moving equally)

<i>intracellular fluid</i> <i>(inside the cell)</i>	<i>extracellular fluid</i> <i>(outside of the cell)</i>	<i>Hypotonic,</i> <i>Hypertonic,</i> <i>Isotonic</i>	<i>water moves mostly</i> <i>inside or outside the cell</i>
5% salt	10% salt		
10% salt	10% salt		
3% glucose	1% glucose		
2% protein	1% protein		
9% salt	9% salt		
13% water	25% water		
59% water	45% water		
90% water	92% water		
74% glucose	87% glucose		