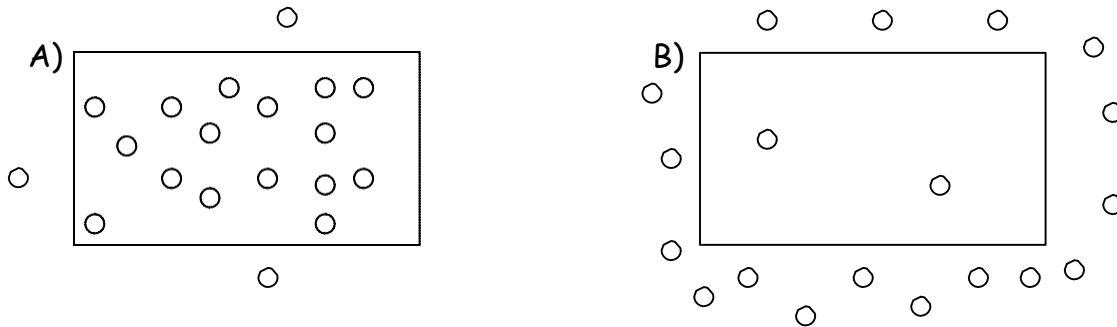


Diffusion and Osmosis Worksheet

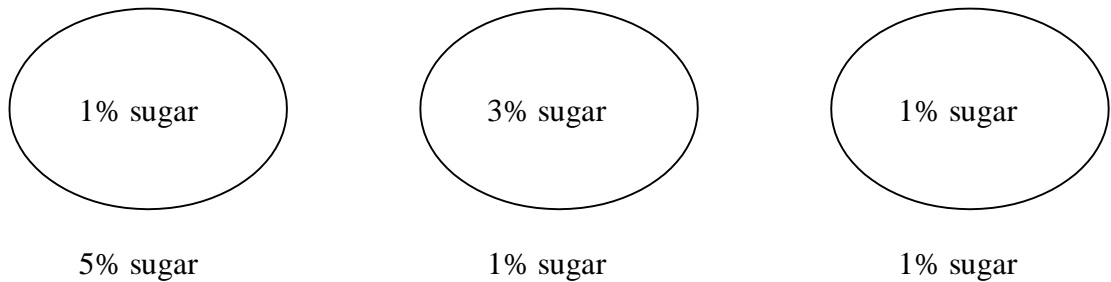
How are the molecules moving in the examples below (1-7)? Write **OSMOSIS** or **DIFFUSION**.

1. The student sitting next to you just came from gym class and forgot to shower and you can tell. _____
2. After sitting in the bathtub for hours, your fingers start to look like prunes. _____
3. The girl sitting two rows ahead of you put on too much perfume this morning. _____
4. One way to get rid of slugs in your garden is to sprinkle salt on them, so they shrivel up. _____
5. Yum! Something smells good. The neighbors are cooking on the grill! _____
6. Gargling with salt water when you have a sore throat causes your swollen throat cells to shrink and feel better. _____
7. Oxygen molecules move from the air sacs in the lungs across the cell membranes into the blood _____

8. Use arrows to indicate the direction of diffusion in each case: ○ is a molecule that can pass through the cell membrane. □ is a cell membrane.



9. For each of the situations below use an arrow to indicate the net movement **of sugar** into or out of the cell. (Assume that the sugar molecules can pass through the cell membrane in each case.)



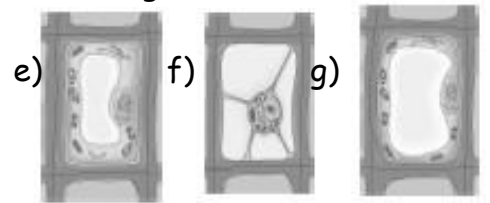
10. Diffusion always causes particles to move from a region of _____ concentration to a region of _____ concentration.
11. Does a cell use energy when molecules diffuse in or out of the cell down the concentration gradient? _____

Match each term on the left with the best descriptor on the right. Use each only once.

Descriptor

- 12. Concentration _____
- 13. Diffusion _____
- 14. Equal amount of water inside a cell as outside _____
- 15. More water outside a cell than inside _____
- 16. Osmosis _____
- 17. More water inside a cell than outside _____
- 18. Selectively permeable membrane _____

- a) Moves particles like oxygen into cells
- b) Amount of a substance in a certain place
- c) Moves water into and out of cells
- d) Allows some substances through



191. You have just bought a tropical fish for your freshwater aquarium. Unfortunately, you do not realize it is a saltwater fish. Using your knowledge of osmosis, **explain** why this fish will not survive in your aquarium. _____

20. Fill in this table. Write whether solutes and water move **INSIDE** the cell or **OUTSIDE** the cell.

- Hint: With **diffusion**, solutes move from an area of high concentration to an area of low concentration.
- Hint: With **Osmosis**, wherever more salt is, water follows! Or, water also goes from an area of high amount of water to an area of low amount of water.

DIFFUSION	OSMOSIS		
Does the <u>SOLUTE</u> move inside or outside the cell?	Does <u>WATER</u> move inside or outside the cell?	intracellular fluid (inside the cell)	extracellular fluid (outside of the cell)
		5% salt	10% salt
		10% salt	10% salt
		3% glucose	1% glucose
		2% protein	1% protein
		9% salt	9% salt
		13% water	25% water

