Name _____ Date _____

Classwork: **Diffusion & Osmosis**

How are the molecules moving in the examples below (1-9)? Write OSMOSIS or DIFFUSION on the blank space.

_____ 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!

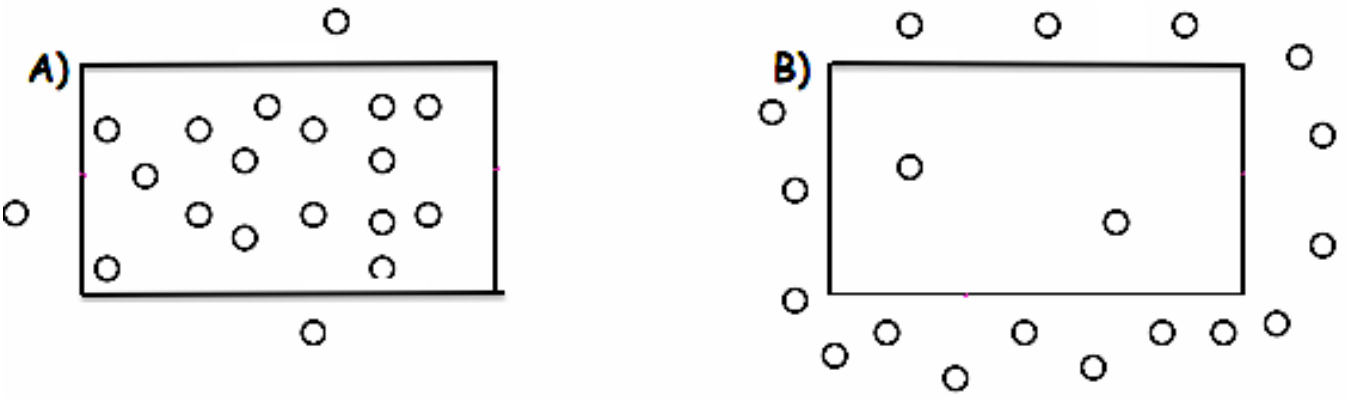
_____ 6. Gargling with salt water when you have a sore throat causes your swollen throat cells to shrink and feel better.

_____ 7. Oxygen molecules move from the air sacs in the lungs across the cell membranes into the blood

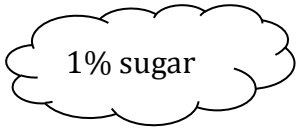
_____ 8. Robert sprays water on the veggies in the produce section to "plump them up".

_____ 9. You put raisins in a glass of water and they plump up.

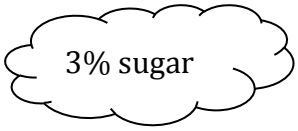
10. Draw arrows to indicate the direction of diffusion in each case. ○ is a molecule that can pass through the membrane. ▭ is a cell membrane.



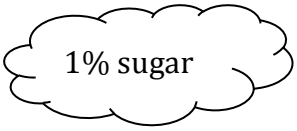
11. For each of the situations below, draw an arrow to indicate the net movement of <u>sugar</u> into or out of the cell. Assume that in each case, the sugar molecules can pass through the cell membrane.



5% sugar



1% sugar



1% sugar

12. The cell membrane is made of a _____ _____.

13. The cell membrane is _____permeable. This means that _____

_____.

14. Diffusion always causes particles to move from a region of _____ concentration to a region of _____ concentration.

15. Does the cell use energy when molecules diffuse in or out of the cell down the concentration gradient? _____

16. _____ requires energy (ATP) to transport molecules against a concentration gradient.

17. In _____ and _____ no energy is used. Which one needs a helper to get things across? _____.

Match the term on the left with the best descriptor on the right.

18. Concentration _____

19. Diffusion _____

20. Equal amount of water inside a cell as outside_____

21. More water outside a cell than inside_____

22. Osmosis_____

23. More water inside a cell than outside _____

24. 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

E)

F)

G)

25. 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.

_____

_____

_____

_____

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 SOLUTE move **inside or outside** the cell?*	*Does WATER move **inside or outside** the cell?*	***intracellular fluid** (inside the cell)*	***extracellular fluid** (outside of the cell)*
26.	27.	5% salt	10% salt
28.	29.	10% salt	10% salt
30.	31.	3% glucose	1% glucose
32.	33.	2% protein	1% protein
34.	35.	9% salt	9% salt
36.	37.	13% water	25% water
38.	39.	59% water	45% water
40.	41.	90% water	92% water
42.	43.	74% glucose	87% glucose

44. Draw the cell membrane on a the space below. Include the following:
   - **Phospholipid bilayer** - Draw the hydrophilic heads (color red) and hydrophobic tails (draw in blue).
   - **Proteins** - Draw the embedded proteins (color orange)
   - Label which side is the **INSIDE** of the cell and which side is the **OUTSIDE** of the cell.