

Osmosis & Diffusion Review Sheet

Name: KEY

Fill in the Blank

- | | | | | |
|---|---|---|--|--|
| <input checked="" type="checkbox"/> away | <input checked="" type="checkbox"/> low | <input checked="" type="checkbox"/> high | <input checked="" type="checkbox"/> hypertonic | <input checked="" type="checkbox"/> hypotonic |
| <input checked="" type="checkbox"/> diffusion | <input checked="" type="checkbox"/> molecules | <input checked="" type="checkbox"/> osmosis | <input checked="" type="checkbox"/> vacuole | <input checked="" type="checkbox"/> water |
| <input checked="" type="checkbox"/> solute | <input checked="" type="checkbox"/> permeable | <input checked="" type="checkbox"/> towards | <input checked="" type="checkbox"/> semi-permeable | <input checked="" type="checkbox"/> concentration gradient |

1. The cell membrane regulates and controls what kind of molecules move in & out of the cell.
2. When molecules spread from an area of high to low concentration to, it is called diffusion.
3. As molecules diffuse, they create a concentration gradient, which is a difference in concentrations across space.
4. Cell membranes are semi-permeable. This means that they only allow certain things to pass through.
5. A membrane that would allow ANYTHING to pass through it would be called permeable.
6. Diffusion is the movement of molecules. Osmosis is the diffusion of water.
7. osmosis is the process of water molecules moving across a cell membrane.
8. The direction that water molecules move is determined by the difference in the concentration of solute dissolved in the solvent inside and outside the cell.
9. Osmotic pressure, or osmosis, pushes water molecules towards the area of greater solute concentration.
10. Water molecules are pulled away from areas of lower solute concentration.
11. The word hypertonic means high concentration of solutes.
12. The word hypotonic means low concentration of solutes.
13. A plant cell undergoes plasmolysis, or shrinking of the cell membrane, when it is placed in a solution with a HIGH concentration of solute. What type of solution causes plasmolysis?
hypertonic
14. An animal cell undergoes cytolysis, or stretching of the cell membrane, when it is placed in a solution with a very LOW concentration of solute. What type of solution causes cytolysis?
hypotonic
15. Turgor pressure is the flow of water into a plant cell that causes the cell membrane to be pushed up against the cell wall and causes the sac in a plant cell to expand. What is this sac that holds this water from the turgor pressure?
vacuole

Isotonic Solutions

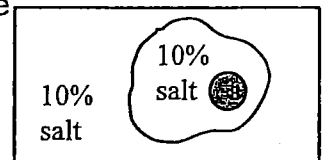
16. The concentration of the solutes inside the cell is _____ to the concentration outside the cell.
(A) less than (B) greater than (C) equal to

17. Water molecules will move: _____
(A) into the cell faster than out of the cell (B) out of the cell faster than they will move into the cell
(C) in and out of the cell at the same rate

18. Turgor Pressure is the pressure that water places on the inside of a PLANT cell. An increase in turgor pressure can cause the cell membrane to press up against the cell wall and a decrease in turgor pressure can cause the cell membrane to shrivel. If the turgor pressure is kept constant, the cell membrane will maintain its shape. In an isotonic solution, the turgor pressure is:
(A) normal (B) decreasing (C) increasing

19. In animal cells, the cell membrane will: _____
(A) shrivel up (B) be normal (C) expand & possibly burst

20. In the picture to the right, the movement of water across the membrane will be
(A) mostly out (B) mostly in (C) in and out equally



Hypotonic Solutions

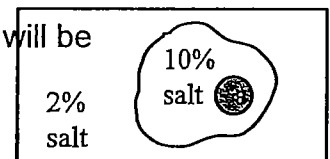
21. The concentration of the solutes inside the cell is _____ to the concentration outside the cell.
(A) less than (B) greater than (C) equal to

22. Water molecules will move: _____
(A) into the cell faster than out of the cell (B) out of the cell faster than they will move into the cell
(C) in and out of the cell at the same rate

23. Turgor Pressure is the pressure that water places on the inside of a PLANT cell. An increase in turgor pressure can cause the cell membrane to press up against the cell wall and a decrease in turgor pressure can cause the cell membrane to shrivel. If the turgor pressure is kept constant, the cell membrane will maintain its shape. In a hypotonic solution, the turgor pressure is: _____
(A) normal (B) decreasing (C) increasing

24. In animal cells, the cell membrane will: _____
(A) shrivel up (B) be normal (C) expand & possibly burst

25. In the picture to the right, the movement of water across the membrane will be
(A) mostly out (B) mostly in (C) in and out equally



Hypertonic Solutions

26. The concentration of the solutes inside the cell is _____ to the concentration outside the cell.
(A) less than (B) greater than (C) equal to

27. Water molecules will move: _____
(A) into the cell faster than out of the cell (B) out of the cell faster than they will move into the cell
(C) in and out of the cell at the same rate