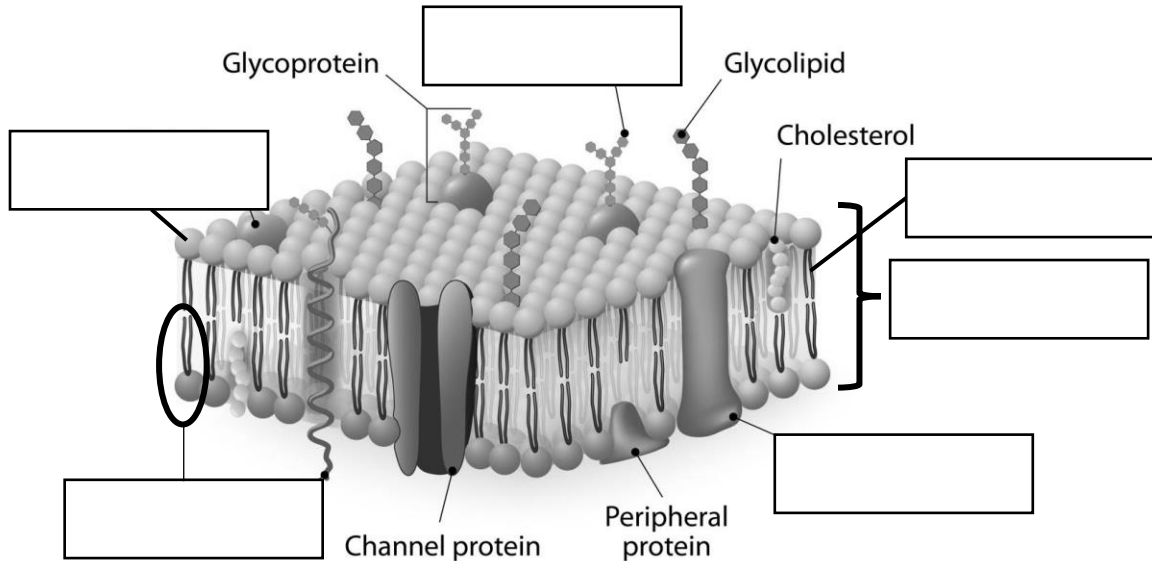


Osmosis & Diffusion Target Check

cell membrane & TRANSPORT REVIEW

Name: _____ Date: _____ Block: _____

1. Use the following terms to label the diagram:



Word Bank:

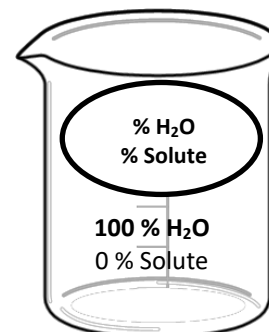
Cell Membrane
Protein
Carbohydrate
Phospholipid
Hydrophilic Head
Hydrophobic Tail

2. Which statement regarding the functioning of the **cell membrane** of all organisms is **NOT** correct?
 - a. The cell membrane forms a boundary that separates the cell from the outside environment
 - b. The cell membrane forms a barrier that keeps all substances out
 - c. The cell membrane can receive and recognizing chemical signals
 - d. The cell membrane controls the movement of molecules into and out of the cell

3. A scientist places a cell in a solution and over time the cell **gains mass and swells**. What is the most likely explanation for the cell's gain in mass?
 - a. The solution is hypertonic to the cell
 - b. The solution is hypotonic to the cell
 - c. The solution and the cell have equal concentrations of solutes
 - d. The solution and the cell have equal concentrations of water

4. Red blood cells have a **salt content of 0.9%**. When the microbiologist places red blood cells in **pure water**, osmosis occurs. What net movement of a substance occurs in the instance of osmosis?
 - a. Water molecules move out of the cells
 - b. Water molecules move into the cells
 - c. Salt ions move out of the cells
 - d. Salt ions move into the cells

[hint: when in doubt, draw it out]



5. A molecule can easily pass through the **phospholipid bilayer** of an animal cell. Which answer below most likely describes the molecule?
- The molecule is very small and charged
 - The molecule is very large and charged
 - The molecule is very small and not charged
 - The molecule is very large and not charged
6. When scientists stain natural cell membranes with a heavy metal, they can view the membranes with an electron microscope. **The heavy metal stains the phosphate heads of phospholipids.** What area(s), when viewed under a microscope, would appear stained? **[Note: shading represents stain]**



7. A wet mount slide from a sample of **Elodea leaf cells** and a slide from a sample of **red blood cells** were initially examined using a light microscope. The two cell samples were then placed into an **80% sucrose (sugar)** solution. After 30 minutes, the cells were again examined using a light microscope. Which statement best describes their appearance?
- the leaf cells had undergone plasmolysis and the red blood cells had swollen and burst
 - the leaf cells had undergone plasmolysis while the red blood cells had shriveled
 - the leaf cells were swollen while the red blood cells remain unchanged
 - both the leaf cells and the red blood cells had swollen and burst
 - neither of the cells had changed since they were placed in an isotonic solution
8. Under which condition will the cell experience a **net loss** of water to its environment?

Condition	Salt Concentration of Cell	Salt Concentration of Environment
1	10%	45%
2	50%	10%
3	10%	10%
4	90%	10%

- 1
- 2
- 3
- 4