

## Biology Homework 1-5.3 Cell Transport Rewind

Use your **journal** as a reference tool in addition to the information provided below. Circle your answer choices and justify your answers.

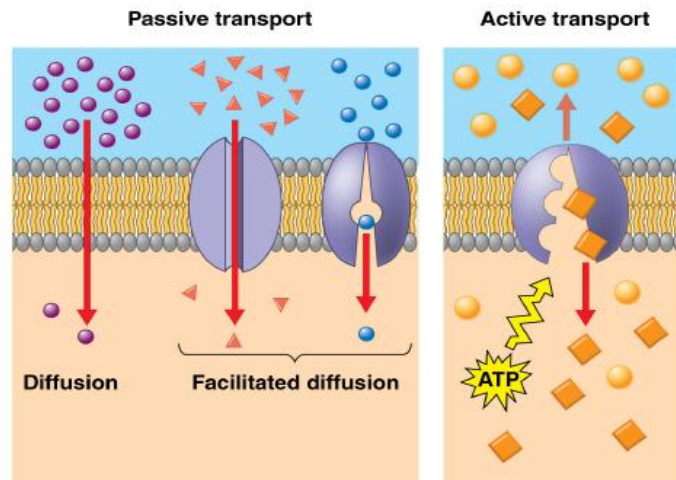
**Plasma (cell) membrane** – This is the boundary between the cell and its environment. It controls entry of nutrients and removal of wastes and maintains homeostasis.

**\*\*\*Homeostasis- balance; a stable, internal environment \*\*\***

**Selective permeability** - The cell membrane is picky. Some molecules are allowed to enter a cell while others are kept out.

### Passive Transport

Some substances can move without using energy. This is called passive transport. The movement of solute (dissolved substance) from an area of greater concentration to an area of less concentration is called **diffusion**. Water molecules can also diffuse. They move from where there is more water to where there is less water. Diffusion of water is called **osmosis**.

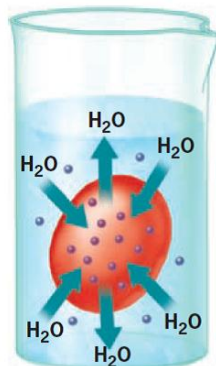


### Active Transport

Some molecules are too large to enter or exit the cell, or their charges prohibit them from passing through the plasma membrane. If this is the case, the cell can still move them, but it must use energy. Movement of substances that requires energy is called **active transport**. Sometimes proteins in the plasma membrane are used to pump materials out. Sometimes, materials enter and exit the cell using vesicles (pockets of the cell membrane). **Endocytosis** uses vesicles to bring materials (like nutrients) into the cell. **Exocytosis** uses vesicles to move materials (like waste products) out of the cell.

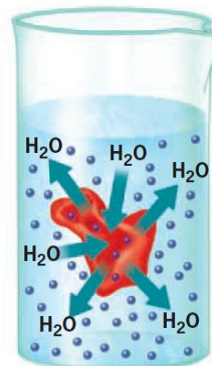
### Osmotic Solutions

(a) Hypotonic solution



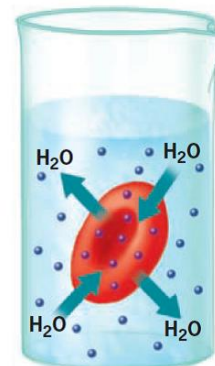
Net water gain  
Cell swells

(b) Hypertonic solution



Net water loss  
Cell shrinks

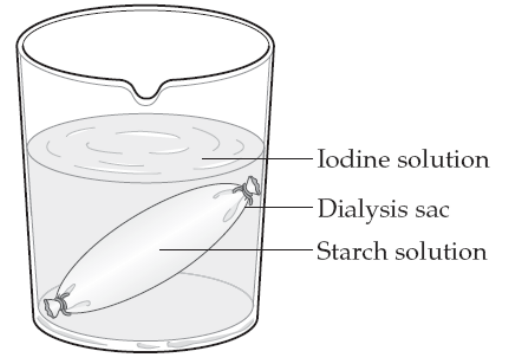
(c) Isotonic solution



No net loss or gain

1. Many marine invertebrates have body surfaces that are permeable to water but not to salt. Osmosis can change the pressure of their body fluids. Fortunately, the ocean is very stable in its salt content. What would happen if a jelly fish were placed in a very low-salt environment?
- It would gain water from the environment.
  - It would gain nutrients from the water in the environment.
  - It would expel proteins into the water.
  - It would expel salt into the water.

2. Starch turns blue-black in the presence of iodine solution. A selectively permeable dialysis sac containing a starch solution is placed into a beaker of iodine solution. Which of these processes is demonstrated by the experiment shown in the diagram?



- endocytosis
  - cellular respiration
  - active transport
  - diffusion
3. The movement of uncharged molecules from a low concentration to a higher concentration is called \_\_\_\_\_.
- Active transport
  - Exocytosis
  - Facilitated Diffusion
  - Osmosis
4. Eukaryotic cells import large molecules through the process of \_\_\_\_\_ and secrete larger molecules by \_\_\_\_\_.
- endocytosis; exocytosis
  - diffusion; exocytosis
  - exocytosis; endocytosis
  - endocytosis; phagocytosis

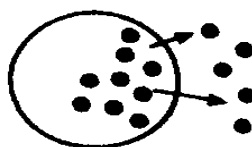
5. Identify the cell transport in each diagram below as active or passive.

Cell A



\_\_\_\_\_

Cell B



\_\_\_\_\_