

Section 7.3- Cell Boundaries**Standards**

1a. Cells are enclosed within semipermeable membranes that regulate their interaction with their surroundings

At the end of this lecture you should know:**Review Questions**

1. Explain the meaning of semi-permeable and explain how being a semipermeable membrane relates to the function of a cell membrane.

2. Because cells live in a liquid environment, why is a lipid the perfect choice for a cell membrane?

Fill In Notes

I. Cell Membrane

A. What is the function of the cell membrane?

1. A cell's membrane is composed of a _____.

a. Name 2 other macromolecules that can be found within a cell's membrane.

II. Cell Wall

A. List 2 organisms that have cell walls.

B. What is the function of a cell wall?

C. Plant cell walls are composed of the carbohydrate _____.

III. Diffusion Through Cell Boundaries

A. All living cells exist in a _____ environment.

B. What is one of the most important functions of a cell membrane?

C. Measuring Concentrations

1. A _____ is a mixture of 2 or more substances.

a. Substances dissolved in a solution are called _____.

b. The _____ of a solution is the mass of solute divided by the volume of the solution (m/V)

D. Diffusion

1. Define diffusion.

2. _____ occurs when the concentration of solute is the same on both sides of the cell membrane.

Lecture Notes

3. Substances diffuse across a cell's membrane without the cell using _____.
- Movement of materials across a membrane without the cell using energy is called Passive Transport

3. What is the difference between diffusion and osmosis?

IV. Osmosis

- A. If a substance is able to diffuse across a membrane, the membrane is said to be _____.
 1. Define selective permeability.

B. Define osmosis.

C. How Osmosis Works

1. Water will move across a cell's membrane until _____ is reached.
 - a. 2 solutions are _____ when the concentrations of water and solute are equal on both sides of a cell's membrane.
 - b. When comparing 2 solutions, the more concentrated solution is _____, while the less concentrated (or diluted) solution is _____.

How does water want to diffuse across a membrane if there is more solute inside the cell than outside the cell?

D. Osmotic Pressure

1. The pressure exerted on the walls of the cell membrane is called _____.
2. _____ help prevent cells from bursting because of osmotic pressure.

V. Facilitated Diffusion

- A. Facilitated diffusion is diffusion of molecules through a _____ channel.

What is the main difference between passive transport systems and active transport systems?

VI. Active Transport

- A. Active transport requires the use of _____ to move substances across a cell's membrane.
 1. Molecular Transport
 - a. Small molecules and ions are carried across membranes by proteins that act like _____.
 2. Endocytosis and Exocytosis
 - a. _____ is the process of taking substances into the cell by infolding of the cell membrane.
 1. 2 Types of Endocytosis
 - a. _____ is the engulfing of particles.
 - b. _____ is the engulfing of liquids.
 - b. _____ is the process of releasing large amounts of material by vacuoles fusing to the cell membrane.

Summary/Thinking Map

Create a double bubble comparing Passive and Active Transport systems of cells.

Key Vocabulary

Define the Key Vocabulary for this section. Be sure to number and underline your Key Vocabulary word.