Internet Assignment:

Movement Across Membranes

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_\_\_

# Diffusion

<http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_diffusion_works.html>

1. What causes the random motion of molecules dissolved in a solution
2. Individual molecules are only in motion in their liquid or gaseous form. TRUE / FALSE
3. What is diffusion?
4. What factors affect the rate of diffusion
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Facilitated Diffusion

<http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_facilitated_diffusion_works.html>

1. What is facilitated diffusion?
2. TRUE / FALSE Because this is a form of diffusion the carrier proteins are nonselective in what passes
3. Carrier proteins move things UP / DOWN their concentration gradients.
4. How do carrier proteins work?
5. Is facilitated diffusion unidirectional? YES / NO

# Osmosis

Go to the website below and watch the animation to answer the questions.

<http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_osmosis_works.html>

1. What is diffusion:
2. What kinds of molecules can cross the plasma membrane?
3. What types of molecules can’t cross the plasma membrane?
4. Can water pass through the plasma membrane? Explain.
5. Define osmosis
6. When urea is added, which way does water move and why?
7. What happens to the water level because of this?
8. Define the following
   1. Isotonic solution:
   2. Hypertonic:
   3. Hypotonic :

# Active Transport

<http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_the_sodium_potassium_pump_works.html>

1. How many sodium atoms are pumped across a membrane in the sodium-potassium pump?
2. What molecule provides the energy for this, and what is the effect of the molecule when it binds?
3. How many potassium ions bind the sodium-potassium pump?
4. What causes the potassium ions to be released to the other side, and what else is released as this happens?
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Sodium is pumped IN / OUT
6. Potassium is pumped IN / OUT
7. Sodium and potassium are pumped UP / DOWN their concentration gradients

# Receptors Linked to a Channel

<http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__receptors_linked_to_a_channel_protein.html>

1. What is the ligand for the sodium channel
2. What opens the sodium channel
3. What do we call a channel like this
4. The sodium-potassium pump pumps sodium IN / OUT
5. The sodium channel pumps sodium IN / OUT
6. Is this an example of active or passive transport? Explain.

# Phagocytosis

<http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__phagocytosis.html>

1. List 3 attractants for phagocytes to areas of infection
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What mediates attachment of a phagocyte to a microorganism
3. What component of complement can bind to microorganisms?
4. What part of the phagocyte can recognize this component of complement attached to the bacteria?
5. Define opsonization:
6. What do we call the vacuole used to encapsulate the bacteria?
7. What happens to the microorganisms once phagocytosed into a cell?
8. List 2 types of enzymes found in this vessicle
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. What do these enzymes do?
10. What process eliminates the microorganism from the cell?

# Lysosomes

<http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__lysosomes.html>

1. What are lysosomes
2. What types of things can be degraded in lysosomes
3. Where are hydrolytic enzymes created, and how do the get to the lysosome?