CHAPTER 7: MEMBRANE STRUCTURE AND FUNCTION
A.P. BIOLOGY
MS. TURNER

NAME:_____

PERIOD:_____

Directions: Answer the following questions in complete sentences and complete thought. Use a separate sheet of paper. Type answers are preferred to hand written answers.

Membrane Structure:

1) Describe the properties of phospholipids and their arrangement in cellular membranes.
2) Explain what freeze-fracture techniques reveal about the involvement of proteins in membranes.
3) Describe the fluid properties of cell membrane and explain how membrane Fluidity is influenced by membrane composition.
4) Describe how proteins and carbohydrates are spatially arranged in cell Membranes and how they contribute to membrane function.

Traffic Across Membranes:

5) Describe factors that affect the selective permeability of membranes.
6) Describe the location and functions of transport proteins
7) Define diffusion. Explain what causes diffusion and why it is a spontaneous Process.
8) Explain what regulates the rate of passive transport.
9) Explain why a concentration gradient across a membrane represents potential Energy.
10) Distinguish between hypertonic, hypotonic, and isotonic solutions.
11) Define osmosis and predict the direction of water movement based on differences in solute concentrations.
12) Describe how living cells with and without walls regulate the balance of water content.
13) Explain how transport proteins are similar to enzymes.
14) Explain how transport proteins facilitate diffusion.
15) Explain how active transport differs from diffusion.
16) Explain what mechanism can generate a membrane potential or electrochemical gradient.
17) Describe the process of co-transport.
18) Explain how large molecules are transported across the cell membrane.
19) Compare pinocytosis and receptor-mediated endocytosis.

Vocabulary: Define each of the following terms. It is suggested that you use your own words for better understanding and retention.

selectively permeability
amphipathic molecule
fluid mosaic model
integral protein
peripheral protein
transport protein
diffusion
concentration gradient
passive transport
hypertonic solution
hypotonic solution
isotonic solution
osmosis
osmoregulation
turgid
flaccid
plasmolysis
facilitated diffusion
aquaporin
gated channel
active transport
sodium-potassium pump
membrane potential
electrochemical gradient
electrogenic pump
proton pump
cotransport
exocytosis
endocytosis
phagocytosis
pinocytosis
receptor-mediated endocytosis
ligand