

General Biology –Chapter 5 Review

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This review is meant to highlight basic concepts from Chapter 5. It does not cover all concepts presented by your instructor. Refer back to your notes, unit objectives, labs, handouts, etc. to further prepare for your exam.

- Describe the structure and function of the components that make up a cell membrane.
 - Phospholipid bilayer
 - Proteins
 - Glycolipids
 - Glycoproteins
 - Cholesterol
- Discuss the term amphipathic and how this term relates to how a phospholipid bilayer forms to make a cell membrane.
- Discuss the following functions of membrane proteins.
 - Channel proteins-
 - Carrier proteins –
 - Cell recognition proteins –
 - Receptor proteins-
 - Enzymatic proteins-
 - Junction proteins-
- Explain why a cell wouldn't be able to survive without some type of membrane transport system.
- What is the major difference between passive and active transport?
- What is meant by a concentration gradient?
- A container has a semi-permeable membrane dividing it into 2 compartments. 10 mL of a 10% NaCl solution is poured into side A and 10 mL of a 20% NaCl solution is poured into side B. Compare the volumes of each side if left to rest for a period of time. Will the volumes on each stay the same or change? Why does this happen?

Fill in the blank/Multiple Choice/True or False

- The plasma membrane is mostly made up of _____.
- Some ions can freely cross the membrane with the assistance of _____ proteins.
- Facilitated diffusion requires energy and uses the help of transport proteins. True or false?
- _____ transport causes a net movement of molecules from a low concentration to a high concentration (uphill)?
- Osmosis is a type of passive transport. True or false?
- An _____, a special type of channel protein, allows water to cross a membrane more rapidly.

14. A semipermeable membrane is stretched across a chamber filled with water. The membrane is only permeable to water. 60mg of salt is added to the left side for the chamber which of the following will happen?
- Water will move toward the right side
 - Salt will move toward the right side
 - Water will move toward the left side
 - Salt will move toward the left side
15. Chamber A contains 40% helium and Chamber B contains 20% helium. Chambers are connected by a tube the molecules can freely cross. Which of the following will occur?
- Some helium will move from chamber A to chamber B
 - Some helium will move from chamber B to chamber A
 - Helium will remain concentrated in chamber A
 - All the helium will move into chamber B
16. An animal cell placed in a 5% salt water solution will swell and possibly lyse. True or false?
17. An animal cell placed in a hypotonic solution will take on water. True or false?
18. Which of the following is a type of active transport?
- Sodium potassium pump
 - Endocytosis
 - Exocytosis
 - All of these
19. Active transport requires _____.
20. Macrophages use a process called _____ to engulf bacteria.

Matching

- _____ Simple Diffusion
 - _____ Facilitated Diffusion
 - _____ Osmosis
 - _____ Active Transport
 - _____ Endocytosis
 - _____ Exocytosis
- Process by which the cell membrane envelops food/liquid to bring it into the cell.
 - Process by which vesicles carrying waste fuse with the cell membrane to remove it from the cell.
 - Sodium can't easily pass the bilayer so they flow from an area of high concentration in the extracellular fluid through a channel to an area of lower concentration in the cytoplasm
 - 3 sodium ions move from an area of low concentration across the membrane to an area of high concentration.
 - Oxygen molecules pass from an area of high concentration through cell membranes in the lung to reach the bloodstream where oxygen concentration is low
 - A special form of diffusion that only involves water.