1. What is the **plasma membrane?**
2. The plasma membrane exhibits \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	1. What does this mean?
3. The plasma membrane is made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	1. Phospholipids contain both \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ regions.

1. What does the **fluid mosaic model** state?
2. Sketch the **phospholipid bilayer** of a cell:
3. Sketch the **phospholipid bilayer with proteins:**
4. What happens to a membrane when temperatures cool?
5. What state must membranes be in to work properly?
	1. Membranes are about as fluid as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	2. Membranes are fluid because they contain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. What is the purpose of **cholesterol** in cell membranes?
	1. What does cholesterol do at warm temperatures?
	2. What does cholesterol do at cool temperatures?
7. What determines most of the specific functions of a membrane?
8. Define **peripheral proteins –**
9. Define **integral proteins –**
10. List the six major functions of membrane proteins:
	1.
	2.
	3.
	4.
	5.
	6.
11. Cells can recognize each other by:
	1. This is how the immune system recognizes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
12. The cell membrane is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
13. Nonpolar molecules can pass through the membrane (easily / slowly )
	1. Examples:
14. Polar molecules can pass through the membrane (easily / slowly )
	1. Examples:
15. Why are transport proteins needed in cells?
16. What do **channel proteins** do?
	1. What is **aquaporin?**
17. What do **carrier proteins** do?

**Types of Cell Transport**

1. Define **diffusion –**
2. Diffusion is considered passive transport. What does this mean?
3. Label the diagram below:



1. Define **osmosis –**
2. The direction of osmosis is determined by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* 1. Define **solutes -**
1. Water diffuses across a cell membrane from a region of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to

 a region of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Label the diagram below:



1. Define **isotonic solution –**
	1. What happens to a cell in this situation?
2. Define **hypertonic solution –**
	1. What happens to a cell in this situation?
3. Define **hypotonic solution –**
	1. What happens to a cell in this situation?
4. What does the red blood cell look like in an isotonic environment?
5. What does the red blood cell look like in distilled water?
6. What does the red blood cell look like in salt water?
7. Why can’t animals cannot survive in hypertonic or hypotonic environments?
8. Give an example of an organism that has adapted to survive in a different environment:
9. Plant cells have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
10. Cell walls are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than plasma membranes and do not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
11. What does the red blood cell look like in an isotonic environment?
12. What does the red blood cell look like in distilled water?
13. What does the red blood cell look like in salt water?
14. Define **facilitated diffusion**  -
	1. This increases the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of transport.
	2. This is considered: ( active / passive ) transport.
15. What does **active transport** do?
	1. Active transport requires \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	2. What is **ATP?**
	3. Active transport is performed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the membranes.
16. What is **exocytosis?**
17. What is **endocytosis?**
18. Define the three types of endocytosis:
	1. Phagocytosis:
	2. Pinocytosis:
	3. Receptor-mediated endocytosis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ each other.