What is the ***KEY CONCEPT*** for section 3-3? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

MAIN IDEA: Cell membranes are composed of two \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ layers.

1. Draw a phospholipid in the box below. Label the ***three*** major parts.

|  |  |  |
| --- | --- | --- |
| Phospholipid part | Polar (charged)  (Hydrophilic) | Nonpolar (hydrophobic) |
| Phosphate group |  |  |
| Glycerol |  |  |
| Fatty acid tail |  |  |

2. Place a check mark in the appropriate box to show which parts of a phospholipid are charged, or polar, and which parts are nonpolar.

3. Using your previous knowledge from the water lab, make an inference to the meaning of hydrophilic and hydrophobic. Hint: they are opposites of one another.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**A cell membrane has other types of molecules embedded in the phospholipid bilayer. Fill in the type of molecule that performs each function indicated in the sentences below.**

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ strengthens the cell membrane.

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ help materials cross the membrane and are also part of the cytoskeleton.

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ help identify cell types.

Choose whether the statement is true or false. If it is false, correct it!

6.true / false A membrane is fluid, because the phospholipids in each layer can move from *side to side, in and out of the cell, by sliding past each other, and by spinning in circles*.

7. true / false A selectively permeable membrane allows *all* molecules to cross.

MAIN IDEA: Chemical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are transmitted across the cell membrane.

Ci**r**cle the word or phrase that best completes the statement.

8. A receptor / phospholipid detects a signal molecule and carries out an action in response.

9. A ligand is a molecule that acts as a receptor / signal when it binds to a receptor / signal.

10. A ligand that can cross / cannot cross the cell membrane can bind to an intracellular receptor.

11. A ligand that can cross / cannot cross the cell membrane can send a message to a cell by binding to / taking off a membrane receptor, which then changes shape.

Vocabulary Check

12. The fluid mosaic model describes the arrangement of the \_\_\_\_\_\_\_\_\_\_\_\_ that make up a cell membrane. The model includes both the fluidity of the membrane and the variety of molecules that make up the membrane.

13. Selective \_\_\_\_\_\_\_\_\_\_\_\_\_ means that the cell membrane allows some, but not all, molecules to cross.

14. **Explain** how membrane receptors transmit messages across the cell membrane. \_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15. **Describe** the similarities (compare) between enzymes and receptors. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16. Insulin helps cells take up sugar from the blood. **Explain** the effect on blood sugar levels if insulin receptors stopped working.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17. Go to your online student edition of the text and go to “interactive review” and then on “self-checks”. Take the 3-3 Self-Check Quiz and record your score below. Write out the most difficult question AND answer next to your score.