2.4 Phospholipid Bilayers Practice

1. There is a plasma membrane surrounding all cells. ( True / False )

2. Prokaryotic cells have sub-cellular structures that may be bound by their own membranes. ( True / False )

3. Animal cells have membrane-bound organelles, plant cells do not. ( True / False )

4. All membranes are made mainly of phospholipids, a type of lipid. ( True / False )

5. Cellular membranes are useful as borders, separating what is inside of a cell/organelle from what is outside. ( True / False )

6. Ribosomes are sub-cellular components that are membrane-bound. ( True / False )

7. What is the role of the plasma membrane in a cell?

1. Forms a barrier between the cytoplasm inside the cell and the environment outside the cell
2. Determines what can go in and out of the cell
3. Protects and supports the cell
4. All of the above

8. What is another name for the plasma membrane?

1. Cell wall
2. Cell membrane
3. Lipid layer
4. Endoplasmic reticulum

9. Why is the plasma membrane considered to be ‘selectively permeable’?

10. How many “layers” is the plasma membrane composed of?

1. One
2. Two
3. Three
4. It varies

11. What does hydrophilic mean?

1. Water-loving
2. Water-hating
3. Water-filling
4. Semipermeable

12. Why can hydrophobic molecules easily pass through the plasma membrane?

13. Draw a picture of the arrangement of phospholipids in a section of cell membrane, label the hydrophobic head and hydrophilic tails.

14. Are membranes only composed of phospholipids?

2.4b Membrane Proteins Practice

1. What is the role of the lipid cholesterol in the plasma membrane?

1. It helps things get across the membrane
2. It helps the cell keep its shape
3. To control what gets in & out of the cell
4. It helps provide insulation to the cell

2. What is the definition of an integral membrane protein?

1. It is a protein that is found on the inside of the plasma membrane
2. It is a protein that is found on the outside of the plasma membrane
3. It is a protein that helps give structure to the plasma membrane
4. It is a protein that is permanently embedded within the plasma membrane

3. Name and describe the two types of integral membrane proteins.

4. How do some integral proteins help identify the cell?

1. They are attached to phospholipid bilayers
2. They are attached to cholesterol
3. They are attached to protein channels
4. They are attached to carbohydrate chains

5. What is the definition of peripheral membrane proteins?

1. They are proteins that are permanently associated with the membrane
2. They are proteins that are temporarily associated with the membrane
3. They are involved in providing structure to the cell
4. They go all the way around the cell

6. Integral membrane proteins can be used for transporting substances (that cannot move through phospholipids) across the membrane. ( True / False )

7. Most peripheral membrane proteins are hydrophilic/hydrophobic (choose one).

8. If you wanted to get a glucose molecule across the plasma membrane from the outside of the cell to the inside of the cell, what type of membrane protein would you use, and why?

9. Describe the Fluid Mosaic Model of the structure of cell membranes.

10. What are flagella and cilia?

1. Extensions of the plasma membrane that help things cross the membrane
2. Extensions of the plasma membrane that help the cell move or help move things past the cell
3. Membrane proteins that help things cross the membrane
4. Membrane proteins that help the cell move or help move things past the cell