Module 5: Membranes — Study Questions

1. Describe the fluid mosaic model of the cell membrane.
2. Why is the membrane called "fluid"? What is the "mosaic"?
3. What is a phospholipid? Draw and label its structure.
4. Why do phospholipids spontaneously form a bilayer in water?
5. What is the role of cholesterol in the membrane?
6. What is the difference between integral and peripheral proteins?
7. Name three functions that membrane proteins can perform.
8. What are glycoproteins and glycolipids? What is their function?
9. Why is the plasma membrane called "selectively permeable"?
10. What is passive transport? Does it require energy?
11. Define diffusion. What determines which direction molecules move?
12. What is the difference between simple diffusion and facilitated diffusion?
13. What is osmosis? How is it different from other types of diffusion?
14. Define isotonic, hypertonic, and hypotonic solutions.
15. What happens to a red blood cell placed in distilled water?
16. What happens to a plant cell placed in a hypertonic solution?
17. How does active transport differ from passive transport?
18. Describe how the sodium-potassium pump works.
19. What is the difference between endocytosis and exocytosis?

20. Compare phagocytosis, pinocytosis, and receptor-mediated endocytosis.