

LIFE SCIENCE TEST #2 (Chapters 4-5)

1. What is the outer boundary of the cell called? **The cell membrane.**
2. True or False? Cell theory states there is no smaller unit capable of life than a cell. **True.**
3. True or False? Cells are made up of non-living molecules. **True.**
4. Why are cells described as spheres or cubes rather than as circles and squares? **Because cells are three-dimensional structures and should be described with three-dimensional words such as *cube* and *sphere*, rather than two-dimensional words such as *circle* and *square*.**
5. What do you call a group of cells working together with a similar function? **A tissue.**
6. What is an organ system? **Two or more organs working together to accomplish a similar function for the good of the organism.**
7. What is a prokaryote? **An organism that is composed of a prokaryotic cell.**
8. How does a prokaryotic cell differ from a eukaryotic cell? **A prokaryote does not have a nucleus, nor does it have membrane-bound organelles. Eukaryotes have both.**
9. What is a nucleoid? **The area of the cytoplasm where prokaryotic DNA is contained.**
10. Why do phospholipids orient with their tails facing toward and their heads facing away from one another? **All cells are surrounded by a watery environment. The phospholipid heads like water, and the tails do not. When many phospholipid molecules are placed into a watery environment, the tails naturally align toward the center of the lipid bilayer to get as far from the water as they can. The heads do not mind at all sitting out in the water, so they face outward, toward the water.**
11. What is meant by “the membrane is selectively permeable?” **It means only certain molecules can get across—the membrane is picky and does not let just any molecule cross into or out of the cell. There are some molecules able to freely pass through the membrane, but most cannot.**
12. True or False? Diffusion is the random movement of molecules from an area of high concentration to an area of low concentration. **True.**
13. What is meant when it is said that equilibrium has been established relative to diffusion. **It means the concentration of molecules is equal on each side of the membrane.**
14. What is osmosis? **It is the diffusion of water across a selectively permeable membrane from an area of high water concentration to low concentration.**
15. What is the difference between active and passive transport? **Passive transport occurs without the cell using any energy. Active transport requires the cell to use energy.**
16. True or False? Cell pump proteins actively move molecules from areas of high concentration to areas of low concentration. **False. They move molecules from areas of lower concentration to areas of higher concentration.**
17. True or False? Endocytosis expels items from the cell and exocytosis brings them into the cell. **False. Endocytosis brings molecules into the cell and exocytosis expels them from the cell.**
18. What is an organelle? **It is the individual functional unit of the cell. Every type of organelle has a specific function in the cell.**
19. If you were looking through a microscope at a cell with a nucleus, what type of cell would it be: prokaryotic or eukaryotic? **Eukaryotic.**