1. Define and provide examples of a polymer.
2. What element is found in all organic compounds?
3. Which of the following is a chemical reaction?

|  |  |
| --- | --- |
| a. | tearing paper into strips |
| b. | burning paper |
| c. | picking up iron filings with a magnet |
| d. | mixing salt and sugar in the same container |

1. Describe the structure of an atom.
2. List the monomers (basic building block) for proteins, carbohydrates, lipids, nucleic acids.
3. Water dissolves many ionic and molecular compounds because of its \_\_\_\_\_.
4. An enzyme is an example of what organic molecule?
5. Define isotope.
6. Compare and contrast saturated fat with unsaturated fat.
7. List the elements found in the molecules of life (carbohydrates, protein, lipids, nucleic acids).
8. Define diffusion.
9. Define Osmosis.
10. Explain the meanings of *Dynamic Equilibrium* and *Concentration Gradient*.
11. What type of cell has a cell wall?
12. What are all living things made up of?
13. List the components of the cell theory.
14. Who discovered cells? Who first described living cells?
15. Compare & contrast prokaryote & eukaryote.
16. Why is the plasma membrane referred to as a fluid mosaic?
17. List the components that make up the plasma membrane.



1. Label the following diagram.
2. List the function of each organelle in the previous diagram.
3. What type of cell is the one shown. Explain.
4. Water moves into a cell placed in a(n) \_\_\_\_\_ solution.
5. Water moves out of a cell if the cell is placed in a(n) \_\_\_\_\_ solution.
6. If cells are placed in a strong sugar solution, water will \_\_\_\_\_.
7. If a cell is placed in salt water, water leaves the cell by \_\_\_\_\_.
8. Why is the cell’s size limited?
9. As a cell grows, its \_\_\_\_\_ increases more than its \_\_\_\_\_.
10. Which conditions shown in Figure 8-4 might cause a cell to burst?



1. The structure most responsible for maintaining cell homeostasis is the \_\_\_\_\_.
2. List several examples of a lipid.
3. List two examples of a nucleic acid.
4. Define pH and explain the pH scale.
5. Why does water dissolve many ionic and molecular compounds?

*Complete each sentence or statement.*

1. An organic compound with a ratio of about two hydrogen atoms and one oxygen atom for each carbon atom is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The smaller subunits that make up nucleic acids are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Two atoms that share electrons are held together by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bonds.
4. Atoms of the same element with different numbers of neutrons are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. Cell structures that contain digestive enzymes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. In a cell, the sites of protein synthesis are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. The movement of materials into and out of the cells is controlled by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. In a cell, the breakdown of molecules in order to release energy occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
9. In plants, the structures that transform light energy into chemical energy are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
10. The network of tiny rods and filaments that forms a framework for the cell is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
11. An organism with a cell that lacks a true nucleus is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
12. A structure outside the plasma membrane in some cells is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

*Define the following terms:*

|  |  |  |  |
| --- | --- | --- | --- |
| a. | cellulose | e. | polymer |
| b. | polar molecule | f. | solution |
| c. | nucleus | g. | enzyme |
| d. | peptide bond | h. | metabolism |