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| ..\..\Pictures\chem2.gifAnatomy & Physiology 12  **Water** | Name:  Block:  Date: |

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the most abundant molecule in living organisms.
2. Because the water molecule has charged atoms, it is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecule. There is a weak \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge on the hydrogen atoms and a weak \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge on the oxygen atom.
3. Draw and label a water molecule
4. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bond occurs whenever a covalently bonded hydrogen is attracted to a negatively charged atom some distance away. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bonds are represented by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ line.
5. Explain why water is considered a polar molecule.
6. Without hydrogen bonding between molecules, water would \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ much below 100°C and freeze much lower than 0°C. Therefore, water is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at those temperatures suitable for life.
7. Water is the universal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and facilities chemical reactions both outside of an within living system. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ end of the water molecules are attracted to the positive sodium ions, and the positive ends of the water molecules are attracted to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ions.
8. Water molecules are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and fill vessels to transport dissolved and suspended molecules.
9. Hydrogen bonds that link water molecules cause water to absorb a great deal of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ before it boils. Therefore, water protects organisms from rapid \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes and helps them maintain their normal internal temperature.
10. Water has a high heat \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, keeping the body from heating up. When an animal sweats, body heat is used to vaporize sweat, thus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the body.
11. Frozen water is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dense than liquid water so that the ice floats on water.
12. When water dissociates, or ionizes, the hydrogen ion has lost an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ion has gained the electron.