Chapter 2 Review

1. Covalent bond - type of bond with equal sharing of electrons.

2. Atomic number - what we look at to determine the number of protons in an atom.

3. Element - a pure substance that cannot be broken down into smaller parts.

4. Isotopes - different forms of the same atom that have a different number of neutrons.

5. Electrons - atomic particles most closely associated with the chemical activity of an atom.

6. Hydrogen bonds - the weak attractive forces between water molecules.

7. Gas - state of matter with the weakest attractive forces.

8. Ionic bond - type of bond involving the gain or loss of electrons.

9. Redox reaction (oxidation-reduction) - type of reaction involving the transfer of electrons.

10. Hydrolysis reaction - reaction involving the addition of water to break bonds.

11. Difference between atomic number and atomic mass:

- Atomic number is the number of protons in an atom, unique to each element.

- Atomic mass is the sum of protons and neutrons.

12. Determining the number of neutrons: Subtract the atomic number from the mass number.

13. Acids, bases, and salts:

- Acids release hydrogen ions (H+) in solution.

- Bases accept hydrogen ions.

- Salts are ionic compounds formed from the neutralization reaction between acids and bases.

14. Difference between dehydration and hydrolysis reactions:

- Dehydration removes water to form bonds and build larger molecules.

- Hydrolysis adds water to break bonds and split large molecules.

15. Oxidation-reduction reaction: Involves the transfer of electrons-oxidation loses electrons, and reduction gains electrons.

16. Importance of water for life: Water is crucial due to its cohesive nature, temperature regulation, solvent properties, and its role in chemical reactions.

17. Determining electrons in the outer orbit: Look at the element's position in the periodic table, specifically its group number.

18. Relation to bond formation: The number of electrons in the outer shell determines how many bonds the atom can form to achieve stability.

19. Difference between a molecule and a compound:

- A molecule is two or more atoms bonded together (can be the same element).
- A compound is a molecule containing different elements.