NOTES

50 questions
2 points each question

True/False

1. True or False: Charles' Law states that if the pressure remains constant, the volume of a gas varies directly as the absolute temperature.

2. True or False: Reactions are driven to a state of greater order which is called entropy.

3. True or False: Hess' Law of Heat Summation states that the total energy of the universe is constant and cannot be created or destroyed.

4. True or False: A binary compound contains two sets of polyatomic particles.

5. True or False: The Bohr model gives one description of the atom and its makeup.

6. True or False: Equilibrium is a static phase.

7. True or False: The periodic law states that the properties of elements are based on their atomic numbers.

8. True or False: Neutralization occurs when acids and bases react to form water and a salt.

9. True or False: An element is a type of compound.

10. True or False: The process of making soap from the reaction of an alkali with a fat is called saponification.

11. True or False: Isomers have the same formula but different structures.

12. True or False: Valence electrons are found closest to the nucleus of the atom.

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13. True or False: Electrolytes are substances which dissolve in water to form a solution which will conduct electricity.

14. True or False: The refraction of light is the bending of light rays as they pass from one material into another.

15. True or False: Categories of subatomic particles include: electrons, protons, neutrinos, quarks.

16. True or False: The hydrolysis of salts is the reaction involving the splitting of water into its ions by the formation of carbohydrates.

17. True or False: Compound formation always occurs with the same percent composition of the elements.

NOTES

Multiple Choice

1. Boyle's Law is stated as the following.
   A. If the temperature remains constant, the volume of a gas varies inversely as the pressure changes.
   B. If the temperature remains constant, the volume of a gas varies directly as the pressure changes.
   C. If the temperature remains constant, the mass of a gas varies directly as the pressure changes.
   D. None of the above.

2. Isotopes of an element differ in the number of
   A. quarks
   B. neutrons
   C. neutrinos
   D. electrons

3. The Ideal Gas Law is expressed as the following.
   A. V/T=k
   B. V/T=nR/P
   C. PV=nRT
   D. None of the above.

4. The following are types of bonds.
   A. Ionic
   B. Covalent
   C. Metallic
   D. All of the above

5. Water purification methods include the following.
   A. Freezing
   B. Aeration
   C. A & B
   D. None of the above

6. The Second Law of Thermodynamics states that the entropy of the universe _____ for any spontaneous process.
   A. increases
   B. decreases
   C. disappears
   D. None of the above

7. A reducing agent loses its _____ electrons readily to another element.
   A. valence
   B. open
   C. soluble
   D. solvent

8. An alloy is a mixture of two or more
   A. salts
   B. metals
   C. acids
   D. bases

9. The Bronsted Theory states that acids are proton _____ and bases are proton _____
   A. generators, consumers
   B. acceptors, donors
   C. donors, acceptors
   D. None of the above

10. Quantum numbers are the following.
   A. Principal, angular momentum, magnetic, spin
   B. Orbital, rectangular, lepton, neutrino
   C. A & B
   D. None of the above

11. Bases react with fats to form
   A. soaps
   B. oils
   C. A & B
   D. None of the above

12. Examples of physical properties include the following.
   A. Solubility in water
   B. Boiling point
   C. Melting point
   D. All of the above

13. The concept that states that if a stress is applied to a system in equilibrium, that equilibrium is moved in the direction which counteracts the effect of the stress.
   A. Second Law of Thermodynamics
   B. Le Chatalier's Principle
   C. Law of Mass Action
   D. Collision Theory

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14. There are ___ general rules of solubility.
    A. 5
    B. 6
    C. 8
    D. 9

15. A precipitate is an _____ compound formed in the chemical reaction between two or more substances in solution.
    A. inmiscible
    B. indicator
    C. insoluble
    D. ionic

16. A _____ is an instrument used to analyze light by separating it into its component wavelengths.
    A. spinthariscope
    B. spectroscope
    C. spectrometer
    D. None of the above

17. Kinetic energy is energy of
    A. motion
    B. position
    C. A & B
    D. None of the above.

NOTES

Fill-in-the-blank

1. A reaction in which energy is released is termed an _____ reaction.

2. _____ Principle states that an electron occupies the lowest energy orbital that can receive it.

3. An anion is an ion or particle which has a _____ charge.

4. The decomposition or _____ reaction occurs when the compound is broken down into elements or other compounds.

5. The _____ properties of hydrogen include the following: colorless; odorless; tasteless; most rapidly diffusing gas.

6. _____ is the process of adding hydrogens to an unsaturated hydrocarbon in the presence of a suitable catalyst.

7. Sodium chloride is a strong _____ meaning that it conducts electricity when dissolved in water.

8. _____ has space and mass.

9. Noble gases have very ____ reaction rates.

10. An _____ formula shows simplest ratio of the numbers and kinds of atoms.

11. The number of _____ determines the atomic number.

12. Coefficients or the _____ in front of the formulas are used to balance equations.

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13. A _____ is a substance that when added to a solution, makes changing the pH of the solution more difficult.

14. Graham's Law states that the rate of diffusion of a gas is _____ proportional to the square root of its molecular mass.

15. Acid and base concentration are often expressed by means of the ___ system.

16. The fewer electrons that an atom tends to add or lose the more _____ it tends to be in chemical reactions.