**General Chemistry Practice Midterm:**

1. Which scientist proposed the model of the atom as a miniature solar system?

a) Bohr

b) Thomson

c) Rutherford

d) Dalton

1. What subatomic particle did Thomson discover?

a) Proton

b) Neutron

c) Electron

d) Nucleus

1. Who discovered the nucleus of an atom?

a) Rutherford

b) Bohr

c) Dalton

d) Mendeleev

1. The Bohr model of the atom is primarily concerned with:

a) Electron configurations

b) Atomic number

c) Energy levels

d) Isotopes

1. What is the electron configuration of carbon?

a) 1s2 2s22p2

b) 1s22s1

c) 1s22s2 2p4

d) 1s22p6

1. Which of the following is an ionic compound?

a) CO2

b) H2O

c) NaCl

d) CH4

1. What is the name of the compound with the formula MgCl2?

a) Magnesium chloride

b) Magnesium dichloride

c) Magnesium chlorate

d) Magnesium chlorite

1. Which of these is a characteristic of ionic compounds?

a) Low melting point

b) Conductivity in solid state

c) Brittle

d) Covalent bonding

1. Covalent compounds are formed by:

a) Transfer of electrons

b) Sharing of electrons

c) Loss of electrons

d) Gain of electrons

1. What is the formula for sulfur hexafluoride?

a) SF6

b) S2F6

c) SF4

d) S6F

1. Which type of bonding is seen in metals?

a) Covalent bonding

b) Ionic bonding

c) Metallic bonding

d) Van der Waals forces

1. The periodic table group known as alkali metals includes:

a) Group 1

b) Group 7

c) Group 2

d) Group 8

1. Halogens are found in which group of the periodic table?

a) Group 1

b) Group 7

c) Group 2

d) Group 8

1. What is the name of Group 18 in the periodic table?

a) Alkaline earth metals

b) Noble gases

c) Halogens

d) Transition metals

1. How many significant figures are in the number 0.00540?

a) 2

b) 3

c) 4

d) 5

1. Accuracy refers to:

a) How close a measurement is to the true value

b) How precise a measurement is

c) Consistency in repeated measurements

d) The number of significant figures

1. Precision refers to:

a) How close a measurement is to the true value

b) How precise a measurement is

c) Consistency in repeated measurements

d) The number of significant figures

1. Which property is characteristic of covalent compounds?

a) High melting point

b) Conductivity in the solid state

c) Often exist as gases or liquids at room temperature

d) Hard and brittle

1. What is the charge of a proton?

a) Positive

b) Negative

c) Neutral

d) Variable

1. In the periodic table, elements in the same group have:

a) Different numbers of valence electrons

b) Similar chemical properties

c) Different atomic numbers

d) Identical masses

1. Which element has the electron configuration 1s^2 2s^2 2p^6 3s^2 3p^5?

a) Chlorine

b) Nitrogen

c) Oxygen

d) Sulfur

1. What is the name of the compound with the formula HNO3?

a) Hydrogen nitrate

b) Nitric acid

c) Hydronitrogen trioxide

d) Nitrous acid

1. What is the formula for sodium carbonate?

a) NaCO3

b) Na2CO3

c) Na3CO3

d) NaCO2

1. Which statement is true about ionic bonding?

a) Electrons are shared between atoms

b) It occurs between nonmetals only

c) It involves the transfer of electrons

d) It results in the formation of neutral atoms

1. What type of bond is formed between hydrogen and oxygen in a water molecule?

a) Ionic bond

b) Covalent bond

c) Metallic bond

d) Van der Waals bond

1. Which of the following is a property of metals?

a) Brittle

b) Low melting point

c) Malleable and ductile

d) Poor conductors of electricity

1. What is the name of Group 17 in the periodic table?

a) Alkaline earth metals

b) Noble gases

c) Halogens

d) Transition metals

1. What is the mass number of an atom with 7 protons, 7 neutrons, and 7 electrons?
   1. 14

b) 7

c) 21

d) 28

1. How many significant figures are in the number 0.00780?

a) 2

b) 3

c) 4

d) 5

1. Which property is characteristic of covalent compounds?

a) Conductivity in the solid state

b) High melting point

c) Often exist as gases or liquids at room temperature

d) Conduct electricity when dissolved in water

1. What is the charge of an electron?

a) Positive

b) Negative

c) Neutral

d) Variable

1. What type of bond is formed between two nonmetals?

a) Ionic bond

b) Covalent bond

c) Metallic bond

d) Hydrogen bond

1. Which element has the electron configuration 1s^2 2s^2 2p^6 3s^2 3p^6 4s^2?

a) Calcium

b) Potassium

c) Argon

d) Titanium

1. What is the formula for sulfur dioxide?

a) SO3

b) SO2

c) S2O

d) S2O3

1. What is the name of the compound with the formula KCl?

a) Potassium chloride

b) Potassium chlorite

c) Potassium chlorate

d) Potassium dichloride

1. Which statement is true about covalent bonding?

a) Electrons are transferred from one atom to another

b) It occurs between a metal and a nonmetal

c) It involves the sharing of electrons

d) It results in the formation of ions

1. What type of bond is present in a molecule of carbon dioxide (CO2)?

a) Ionic bond

b) Covalent bond

c) Metallic bond

d) Hydrogen bond

1. Which of the following is NOT a property of metals?

a) Conductivity of electricity

b) Brittle

c) Malleability

d) Ductility

1. How many significant figures are in the number 7000.0?

a) 2

b) 3

c) 5

d) 6

1. Which property is characteristic of ionic compounds?

a) Conductivity in the solid state

b) High melting point

c) Often exist as gases or liquids at room temperature

d) Conduct electricity when dissolved in water

1. What is the charge of a neutron?

a) Positive

b) Negative

c) Neutral

d) Variable

1. Which subatomic particle is responsible for the identity of an element?

a) Proton

b) Neutron

c) Electron

d) Nucleus

1. What is the name of the compound with the formula H2SO3?

a) Hydrogen sulfite

b) Sulfuric acid

c) Sulfurous acid

d) Hydrosulfuric acid

1. What type of bond is present in a molecule of methane (CH4)?

a) Ionic bond

b) Covalent bond

c) Metallic bond

d) Hydrogen bond

1. Which of the following is a property of covalent compounds?

a) High melting point

b) Conductivity in the solid state

c) Often exist as gases or liquids at room temperature

d) Conduct electricity when dissolved in water

1. What is the formula for calcium chloride?

a) CaCl2

b) Ca2Cl

c) CaCl

d) Ca2Cl3

1. What property describes an atom's ability to attract shared electrons in a chemical bond?

a) Atomic radius

b) Electronegativity

c) Ionization energy

d) Octet rule

1. As you move from left to right across the periodic table, electronegativity generally:

a) Decreases

b) Increases

c) Remains constant

d) Fluctuates unpredictably

1. Which of the following elements has the smallest atomic radius?

a) Sodium

b) Potassium

c) Chlorine

d) Fluorine

1. Across a period (row) in the periodic table, atomic radius tends to:

a) Decrease

b) Increase

c) Remain the same

d) Vary randomly

1. What is the trend for ionization energy as you move from left to right across a period in the periodic table?

a) Increases

b) Decreases

c) Remains constant

d) Varies unpredictably

1. Ionization energy is defined as the energy required to:

a) Gain an electron

b) Lose a proton

c) Remove an electron

d) Add a neutron

1. Which of the following elements has the highest tendency to gain electrons to achieve an octet?

a) Fluorine

b) Neon

c) Sodium

d) Aluminum

1. Elements that readily form positive ions typically have:

a) Low electronegativity

b) High electronegativity

c) Low ionization energy

d) High ionization energy

1. Which of the following properties tends to increase going down a group in the periodic table?

a) Electronegativity

b) Ionization energy

c) Atomic radius

d) Octet rule adherence

1. The trend for atomic radius as you move down a group in the periodic table is that it generally:

a) Decreases

b) Increases

c) Remains constant

d) Varies unpredictably

1. Which of the following elements has the highest tendency to lose electrons to achieve an octet?

a) Sodium

b) Oxygen

c) Chlorine

d) Sulfur

1. Elements with higher electronegativity values tend to:

a) Attract electrons more strongly

b) Attract protons more strongly

c) Lose electrons easily

d) Gain electrons easily

1. Which of the following elements has the largest atomic radius?

a) Fluorine

b) Carbonic

c) Lithium

d) Nitrogen

1. What is the appropriate action if you spill a chemical on your skin during a lab experiment?

a) Wipe it off with a paper towel.

b) Wash the affected area with water and notify the teacher immediately.

c) Ignore it if it doesn't cause immediate discomfort.

d) Cover it with your lab coat and continue working.

1. Where should you keep your backpack, food, and drinks during a lab session?

a) On the lab bench to have them handy

b) Under the lab bench or in designated areas outside the lab

c) On the lab equipment for easy access

d) On your lap to prevent tripping hazards

1. How should you smell a chemical in the lab?

a) Take a deep breath directly from the container.

b) Waft the scent gently towards your nose with your hand.

c) Pour a small amount on your hand to smell it.

d) Don't smell chemicals directly; use designated methods or devices.