**SNC 2D – GRADE 9 CHEMISTRY REVIEW**

**PART 1: CLASSIFYING SUBSTANCES**

MATTER

PURE SUBSTANCE

MIXTURE

ELEMENTS

COMPOUNDS

SOLUTIONS

HETEROGENEOUS

MIXTURES

**PART 2: ELEMENTS**

Definition:

1. Write the name of the correct element under each symbol. A periodic table can be found inside the back cover of the textbook.

a. B b. Mg c. Na d. Al

e. N f. K g. Li h. Ag

i. O j. He k. Ca l. Au

m. C n. Cl o. Ne p. Cu

q. K r. F s. P t. Fe

u. Ar v. Be w. Si x. Sn

2. Write the correct symbol beside each element.

 a. Oxygen b. Nitrogen c. Silver d. Bromine

 e. Carbon f. Boron g. Phosphorus h. Gold

 i. Magnesium j. Aluminum k. Tin l. Helium

 m. Lithium n. Fluorine o. Hydrogen p. Neon

 q. Potassium r. Sulfur s. Silicon t. Copper

 u. Sodium v. Zinc w. Chlorine x. Iron

**PART 3: COMPOUNDS**

Definition:

1. Fill in the following table regarding counting atoms.

|  |  |  |
| --- | --- | --- |
| COMPOUND | ELEMENTS PRESENT | NUMBER OF ATOMS OF EACH ELEMENT |
| H2O |  |  |
| FeCl3 |  |  |
| K2CO3 |  |  |
| 2Na2CO3 |  |  |
| Ca(OH)2 |  |  |
| 3Al(OH)3 |  |  |
| 4Pb(NO3)2 |  |  |

**PART 4: MIXTURES**

Definitions:

Solution –

Heterogeneous Mixture –

1. Classify each element in the following table as a solution or heterogeneous mixture.

|  |  |
| --- | --- |
| ITEM | CLASSIFICATION (S or HM?) |
| Ketchup |  |
| Kool-Aid |  |
| Salsa |  |
| Paint |  |
| Air |  |
| Milk |  |
| Gravel |  |
| Pond Water |  |
| Apple Sauce |  |
| Gasoline |  |
| Honey |  |
| Plywood |  |

**PART 5: ATOMIC STRUCTURE**

 The atom consists of three subatomic particles; \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The protons and neutrons are found in the centre of the atom called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_. The electrons are found orbiting the nucleus (similar to the planets around the sun). Protons have a \_\_\_\_\_\_\_\_\_\_\_\_\_ charge, and a mass of \_\_\_\_\_\_\_\_. Electrons have a \_\_\_\_\_\_\_\_\_\_\_\_\_ charge, and a mass of \_\_\_\_\_\_. Neutrons have a \_\_\_\_\_\_\_\_\_\_\_\_\_ charge, and a mass of \_\_\_\_\_\_.

1. Draw Bohr-Rutherford Diagrams for the first 20 elements.

|  |
| --- |
|  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |

**PART 6: PATTERNS & TRENDS IN THE PERIODIC TABLE**

 The periodic table arranges elements into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (horizontal rows) and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (vertical columns) according to their atomic numbers. The period number gives the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and the group number gives the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Fill in the following table.

|  |  |  |
| --- | --- | --- |
| Name of Group | Group Number | Number of Valence Electrons |
| Alkali Metals |  |  |
| Alkaline Earth Metals |  |  |
| Halogens |  |  |
| Noble Gases |  |  |

**PART 7: PROPERTIES OF MATTER**

Fill in the following tables.

PHYSICAL PROPERTIES

|  |  |  |
| --- | --- | --- |
| Property | Meaning | Examples  |
| Hardness |  |  |
| State |  |  |
| Malleability |  |  |
| Ductility |  |  |
| Melt & Boil Points |  |  |
| Solubility |  |  |
| Viscosity |  |  |
| Density |  |  |

CHEMICAL PROPERTIES

|  |  |  |
| --- | --- | --- |
| Property | Meaning | Examples |
| Combustibility |  |  |
| Reaction with Acid |  |  |

**PART 8: SUBATOMIC PARTICLES**

Fill in the following table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Element | Atomic Number | Mass Number | Number of Protons | Number of Electrons | Number of Neutrons |
| Aluminum |  |  |  |  |  |
|  | 18 |  |  |  |  |
|  | 4 |  |  |  |  |
|  |  |  | 5 |  |  |
|  |  | 40 |  |  |  |
| Carbon |  |  |  |  |  |
|  |  | 19 |  |  |  |
|  |  |  |  | 2 |  |
|  |  |  |  |  | 0 |
|  | 3 |  |  |  |  |
|  |  |  | 12 |  |  |
| Neon |  |  |  |  |  |
|  | 7 |  |  |  |  |
|  |  |  |  |  | 8 |
|  |  | 31 |  |  |  |
|  |  |  | 19 |  |  |
|  |  |  |  | 14 |  |
|  |  |  |  |  | 16 |
| Sodium |  |  |  |  |  |