2nd Term-Rivision Exercises

01)

I. What is relative atomic mass of an element?

II. Write the equation in words to find the relative atomic mass.

III. The mass of a Magnesium (Mg) atom is 4.035×10^{-23}g'and the mass of a $^{12}_{6}C$ atom is 1.99×10^{-23} g. Find the relative atomic mass of Magnesium.

IV. Calculate the relative molecular mass of the following compounds.

a.) Carbon dioxide CO_2 b.) Water-H_2O c.)Methane –CH_4

d) Acetic acid -CH_3COOH e) Urea - $CO(NH_2)_2$

(R.A.M = H = 1, C = 12, N =14, O = 16)

V. Find the molar mass of the following formulas.

a. NaCl -Sodium chloride b. $CaCO_3$ -Calcium carbonate

c. $(NH_4)_2CO_3$ -Ammonium carbonate d . $CuSO_4$ -Copper sulphate

d. NH_4Cl -Ammonium chloride

(R.A.M. = H = 1, C = 12, N = 14, O = 16, Na = 23, S = 32, Cl - 35.5, Cu=63.5)

VI.

a. What is the accepted value for Avogadro constant?

b. Define the mole.

c. Write the relationship between mole and the Avogadro constant.

d. What is molar mass?

VII. Ammonium carbonate-$(NH_4)_2CO_3$

a. How many molecules are there in 3 moles of Ammonium carbonate?

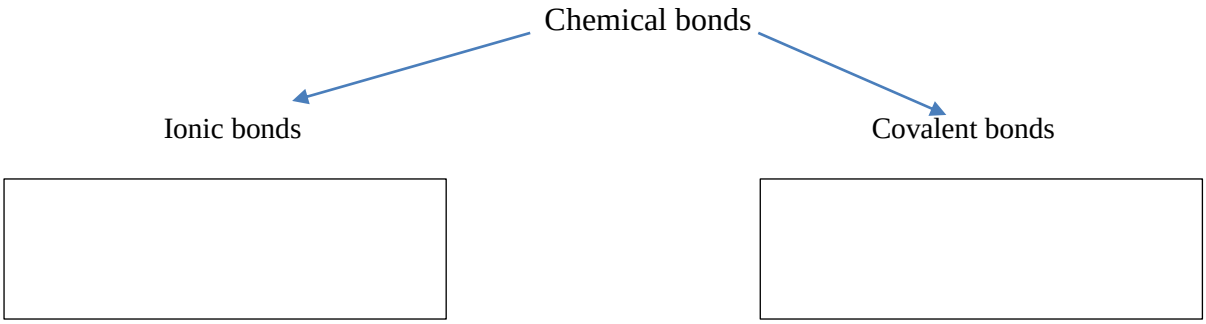
b. Find the number of nitrogen atoms in 3 moles of Ammonium carbonate?

c. Calculate molar mass of Ammonium carbonate.(R.A.M. = H = 1, C = 12, N = 14, O = 16)

d. Find the number of moles of ammonium carbonate contain in 24g of Ammonium carbonate.

02) The attractive forces or binding among atoms or ions resulted by the rearrangement of electrons in the valence shells for stabilizing are called chemical bonds. According to the way the atoms behave when they chemically bind together, the chemical bonds can be divided into two types.

I. What are the two types of chemical bonds?



II. Write examples for ionic bonds and covalent bonds.

III. Draw diagrams separately, to show how bonds are formed in the above mentioned compounds.
Write the following information about the atoms before the combination and after the combination.
the number of electrons, electronic configuration, number of protons and total charge

IV. Introduce the following words.
a) dot and cross diagram b) Lewis dot diagram c) Lewis structure

V. Fill in the table using the knowledge of dot and cross diagram , Lewis dot diagram and Lewis structure.

Atom	**Dot and cross diagram**	**Lewis dot diagram**	**Lewis structure**
H_2			
N_2			
O_2			
NH_3			
CH_4			

VI. Write three special properties of water due to attractive forces among water molecules.

VII. Compare the characteristics of ionic compounds and covalent compounds using a table.