SUMMULATIVE II WORKSHEET – 2011-12

GRADE IX

CHEMISTRY

One mark each:

1.Define atomic mass unit?

2.Define Mole?

3.An atom has electronic configuration of 2, 8, 7

(1)What is the atomic number of the element?

(2)Which of the following elements have same number of valence electrons

N(7), F(9), P(15), Ar(18)

4.Why are He, Ne and Ar are Inert?

5.Why are all electrons called fundamental particles of all atoms?

6.Calculate the value of moles in 17g of H_2O_2.[(H =1u), O =16u]

7.What is meant by Avogadro 's constant?

8.State Law of conservation of mass.

9.Calculate the number of molecules in 4g of methane (C=12u, H =1u)

10.What are isotopes? Give examples.

2 marks each:

11.What is the electronic configuration of Na^+,if atomic No, of Na atom is 11.What is the atomic No. and atomic mass of Na^+ .

12.Which of the two would be chemically more reactive element 'X' of atomic No.18 or element 'Z' of atomic No. 16 and why?

13.What is the difference between sodium atom and sodium ion?

14.How many molecules are present in

(a) 9g of water (b) 17g of NH_3 .

(H = 1u, O = 16u, N =14u)

15.Calcium and Oxygen are combined in the rates of 5:4 by mass to form calcium oxide. What mass of oxygen gas would be required to react with 2.5g of calcium?

16.How many atoms of carbon and hydrogen are present in 3 moles of ethane (C_2 H_6).

17.The atomic number of Aluminum is 13 and that of Chlorine is 17.How many electrons , protons and neutrons are present in Al^{3} and Cl^{-} ions.

18.What you meant by valence electrons?

(1) Write the electronic configuration of elements potassium (19) and N (7)

(2)Write the No.of valance electrons in each of these elements?

19.An element has three valence electrons in the 3^{rd} shell. Name the element and give its atomic No. and state is it a metal or non-metal?

20.Calculate the mass of 6.022×10^{23} N_2 molecules. (N = 14u)

3 mark each:

21. Write the chemical formula for the following:

(1) Ammonium Carbonate.

(2)Barium Sulphate.

(3) Sodium Sulphide.

(4)Aluminium Hydroxide.

(5)Calcium Flouride.

(6)Potassium Nitrate.

22. Calculate the molecular mass of the following:

(i)$(NH_4)_2SO_4$ (ii)$Al_2(SO_4)_3$ (iii) $Ca(HCO_3)_2$

[N = 14u, H =1u, S = 32u, Al = 27u, O = 16u, C = 12u]

23.Calculate the No.of Al^{3+} ions present in 0.056g of Al_2O_3.

24.What is chemical formula? Give two information conveyed by chemical formula of a compound.

25.Explain Rutherford's Alpha Scattering experiment for the discovery of Nucleus. Write his observations and conclusions.

26.The average atomic mass of a sample of an element X is 16.2u.What are the percentages of isotopes $^{16}X_8$and $^{18}X_8$ in the sample.

27.(1) An ion M^{3+} has 10 electrons and 14 neutrons. What is the atomic number and mass number of M.

(2) Write the electronic configuration of the following ions.

(1) Mg^{2+} (2) O^{2-} (3)S^{2-} (4) Na^{+} (5) N^{3-}

28. (1) Which has more No.of atoms, 100g of Sodium or 100g of Iron
(Na =23u, Fe = 56u).

(2) Which has more No.of molecules, 4g of CH_4 and 8g of H_2O
[H = 1u, O = 16u, C = 12u]

29. (1) For the symbol, H,Dand T Calculate three subatomic particles found in each of them?

30.If Chlorine atom is available in the form of say two isotopes $_{17}Cl^{35}$ (75%)and $_{17}CL^{37}$(25%), Calculate the average atomic mass of chlorine atom.

5 Mark Questions:

31. (1) Explain Bohr model of an atom?

(2)Draw the Bohr model of the following atom

(1) Sodium ($_{11}Na^{23}$)

(2) Oxygen ($_{8}O^{16}$)

(3) Calcium ($_{20}Ca^{40}$)

32.(1) Calculate the molecular mass of the following :

(1) CH_3-OH (2) $CuSO_4.5H_2O$ (3) $Ca(HCO_3)_2$

(2)Calculate the No.of particles in each of the following:

(1) 46g of Na atoms (Na = 23u)

(2) 8g of O_2 molecules

(3)0.1 mole of carbon atoms

(4)100g of CH_4

33. (1)What are the postulates of Dalton's Atomic theory of matter?

(2)Define the following terms:

(i) Atomicity (ii) Valency (iii) Relative atomic mass (iv) Molecular mass