CLASS-XI ***VGR COACHING CENTER*** ***MARK-60***

CHEMISTRY

PART-A ***10*1=10***

1. **Carbon forms two oxides, namely carbon monoxide and carbon dioxide. The equivalent mass of which element remains constant?**
   (a) Carbon (b) oxygen c) both carbon and oxygen (d) neither carbon nor oxygen
2. **1 g of an impure sample of magnesium carbonate (containing no thermally decomposable impurities) on complete thermal decomposition gave 0.44 g of carbon dioxide gas. The percentage of impurity in the sample is**
   (a) 0 % (b) 4.4 % (c) 16 % (d) 8.4 %
3. **7.5 g of a gas occupies a volume of 5.6 litres at 0o C and 1 atm pressure. The gas is**
   (a) NO (b) N2O (c) CO (d) CO2
4. **What is the mass of precipitate formed when 50 ml of 8.5 % solution of AgNO3 is mixed with 100 ml of 1.865 % potassium chloride solution?**
   3.59 g (b) 7 g (c) 14 g (d) 28 g
5. **Which of the following compound(s) has /have percentage of carbon same as that in ethylene (C2H4)**
   (a) propene (b) ethyne (c) benzene (d) ethane
6. **Which one of the following is used as a standard for atomic mass.**
   6C12 (b) 7C12 (c) 6C13 (d) 6C14
7. **Rusting of iron articles is an example of reaction**
   (a) Combustion (b) decomposition (c) redox (d) hydrolysis
8. **Which form of based on physical characteristics possess neither definite volume nor definite shape? (a) Solids (b) Liquids (c) Gases (d) Both (a) and (b)**
9. **40 ml of methane is completely burnt using 80 ml of oxygen at room temperature The volume of gas left after cooling to room temperature is**
   (a) 40 ml CO2 gas (b) 40 ml CO2 gas and 80 ml H2O gas
   (b) 60 ml CO2 gas and 60 ml H2O gas (d) 120 ml CO2 gas
10. **The equivalent mass of a trivalent metal element is 9 g eq-1 the molar mass of its anhydrous oxide is**
    (a) 102 g (b) 27 g (c) 270 g (d) 78 g

PART-B ***ANY 10***

11. **What do you understand by the term mole**
12. **State Avogadro's hypothesis.**
13. **Calculate the molar mass of the following compounds.**
    i) urea [CO(NH2)2]
    ii) acetone [CH3COCH3]

14. Mass of one atom of an element is 6.645 x 10-23 g. How many moles of element are there in 0.320 kg.

15. What is the empirical formula of the following ?

iii) Fructose (C6H12O6) found in honey

iv) Caffeine (C8H10N4O2) a substance found in tea and coffee

16. How many moles of hydrogen is required to produce 10 moles of ammonia ?

17. By applying the knowledge of chemical classification, classify each of the following into elements, compounds or mixtures (i) Sugar (ii) Sea water (iii) Distilled water (iv) Carbon dioxide

18. Define auto redox reaction

19. What are the method are using balncing redox reaction

20. Calculate the oxidation number of $Cr2O7^{-2}$

21. How can we say sugar has solid and water has liquid?

PART-C *ANY(5)*

1. The balanced equation for a reaction is given below

a. 2x+3y □□4l + m

b. When 8 moles of x react with 15 moles of y, then

i) Which is the limiting reagent?

ii) Calculate the amount of products formed.

iii)Calculate the amount of excess reactant left at the end of the reaction.

2. Calculate the percentage composition of the elements present in magnesium carbonate. How many kilogram of CO2 can be obtained by heating 1 kg of 90 % pure magnesium carbonate

3. An organic compound present in vinegar has 40 % carbon, 6.6 % hydrogen and 53.4 % oxygen. Find the empirical formula of the compound.

4. What is the condition for molar volume?

5. What is the difference between molecular mass and molar mass? Calculate themolecular mass and molar mass for carbon monoxide.

6. Hydrogen peroxide is an oxidising agent. It oxidises ferrous ion to ferric ion and reduced itself to water. Write a balanced equation.

PART-D ANY 3

1. a.Define i)relative atomic mass ii)equivalent mass
   b.write any three rules for assigning oxidation number

2. **Experimental analysis of a compound containing the elements x,y,z on analysis gave the following data. x = 32 %, y = 24 %, z = 44 %. The relative number of atoms of x, y and z are 2, 1 and 0.5, respectively. (Molecular mass of the compound is 400 g) Find out.**
i) The atomic masses of the element x,y,z.
ii) Empirical formula of the compound and
iii) Molecular formula of the compound.

3. **Balance the following equations by oxidation number method**
i) $K_2Cr_2O_7 + KI + H_2SO_4 \rightarrow K_2SO_4 + Cr_2(SO_4)_3 + I_2 + H_2O$
ii) $KMnO_4 + Na_2SO_3 \rightarrow MnO_2 + Na_2SO_4 + KOH$

4. **Balance the following equations by ion electron method.**

i) $KMnO_4 + SnCl_2 + HCl \rightarrow MnCl_2 + SnCl_4 + H_2O + KCl$
ii) $C_2O_4^{2-} + Cr_2O_7^{2-} \rightarrow Cr^{3+} + CO_2$ (in acid medium)