



**CK SCHOOL OF PRACTICAL KNOWLEDGE- CUDDALORE-1**

**First Mid term Test**

**Std : XI**

**Marks : 25**

**Subject : Chemistry**

**Time : 1 hrs**

**PART - I**

**Choose the best answer :**

**5 × 1 = 5**

- 1) The equivalent mass of a trivalent metal element is 9 g eq<sup>-1</sup>, the molar mass of its anhydrous oxide is \_\_\_\_\_  
 a) 102 g                      b) 27 g                      c) 270 g                      d) 78 g
- 2) Total number of electrons present in 1.7 g of ammonia is  
 a) 6.022 × 10<sup>23</sup>    b) 6.022 × 10<sup>22</sup>/ 1.7    c) 6.022 × 10<sup>24</sup>/ 1.7    d) 6.022 × 10<sup>23</sup>/ 1.7
- 3) The equivalent mass of potassium permanganate in alkaline medium is  
 a) 31.6                      b) 52.7                      c) 79                      d) none of these
- 4) The oxidation state of C in CH<sub>2</sub> F<sub>2</sub> is  
 a) +1                      b) -1                      c) -2                      d) 0
- 5) Which of the following reaction represents reduction, according to classical concept ?  
 a) 4 Fe + 3O<sub>2</sub> → 2 Fe<sub>2</sub>O<sub>3</sub>                      b) H<sub>2</sub>S + Cl<sub>2</sub> → 2HCl + S  
 c) Fe<sup>2+</sup> → Fe<sup>3+</sup> + e<sup>-</sup>                      d) CuO + C → Cu + CO

**PART - II**

**Answer any 3 questions :**

**3 × 2 = 6**

- 6) What is the empirical formula of  
 i) Fructose ( C<sub>6</sub> H<sub>12</sub> O<sub>6</sub> )  
 ii) Caffeine ( C<sub>8</sub> H<sub>10</sub> N<sub>4</sub> O<sub>2</sub> )
- 7) What do you understand by the term mole ?
- 8) What are limiting reagents ?
- 9) Calculate the gram equivalent mass of KMnO<sub>4</sub>.

**PART - III****Answer any 3 questions : Q.NO. 13 is compulsory****3 × 3 = 9**

- 10) A compound on analysis gave the following percentage composition  
C = 54.55 % H = 9.09 % O = 36.36 % Determine the empirical formula of the compound.
- 11) Distinguish b/w oxidation and reduction.
- 12) The balanced equation for a reaction is given below  

$$2x + 3y \longrightarrow 4l + m$$
 When 8 moles of x reacts with 15 moles of y , then  
 i) which is the limiting reagent ?  
 ii) calculate the amount of products formed ?
- 13) Balance the following equation using oxidation number method .  

$$\text{As}_2 \text{S}_3 + \text{HNO}_3 + \text{H}_2\text{O} \longrightarrow \text{H}_3\text{AsO}_4 + \text{H}_2\text{SO}_4 + \text{NO}$$

**PART - IV****Answer Any 1 of the following :****1 × 5 = 5**

- 14) a) Balance the following equation by ion electron method.  

$$\text{KMnO}_4 + \text{FeSO}_4 + \text{H}_2\text{SO}_4 \longrightarrow \text{MnSO}_4 + \text{Fe}_2(\text{SO}_4)_3 + \text{K}_2\text{SO}_4 + \text{H}_2\text{O}$$
- (or)
- b) A compound on analysis gave Na = 14.31% S= 9.97 % H = 6.22% and O = 69.5 %. Calculate the molecular formula of the compound if all the hydrogen in the compound is present in combination with oxygen as water of crystallization. ( Molecular mass is 322 ).
- 15) a) In a reaction  $x+y+z_2 \longrightarrow xyz_2$ , identify the limiting reagent if any, in the following reaction mixtures.
- 200 atoms of x + 200 atoms of y + 50 molecules of  $z_2$
  - 1 mole of x + 1 mole of y + 3 mole of  $z_2$
  - 50 atoms of x + 25 atoms of y + 50 molecules of  $z_2$
  - 2.5 mole of x + 5 mole of y + 5 mole of  $z_2$
- (or)
- (b) Balance the following equations by oxidation number method.  

$$\text{KMnO}_4 + \text{H}_2\text{C}_2\text{O}_4 + \text{H}_2\text{SO}_4 \longrightarrow \text{K}_2\text{SO}_4 + \text{MnSO}_4 + \text{CO}_2 + \text{H}_2\text{O}$$