

## SECOND MID TERM TEST - 2024

11 Std.  
Time : 1.30 Hrs

Chemistry

Reg No.

265121

Total Marks : 35

## Part A

10 x 1 = 10

Answer all the questions:

- Which of the following colour in flame test is shown by Potassium salt?  
a) Lilac                      b) Crimson Red      c) apple green                      d) yellow
- Formula of Plaster of Paris  
a)  $3CaSO_4 \cdot 2H_2O$       b)  $CaSO_4 \cdot 2H_2O$       c)  $2CaSO_4 \cdot 2H_2O$       d)  $CaSO_4 \cdot \frac{1}{2}H_2O$
- Assertion** :  $BeSO_4$  is soluble in water while  $BaSO_4$  is not.  
**Reason** : Hydration energy decreases down the group from Be to Ba and lattice energy remains almost constant.  
a) Both assertion and reason are true and reason is the correct explanation of assertion.  
b) Both assertion and reason are true but reason is not the correct explanation of assertion.  
c) Assertion is true but reason is false.      d) Both assertion and reason are false.
- The normality of 1.25M  $H_2SO_4$  is  
a) 1.25N                      b) 3.75N                      c) 2.25N                      d) 2.5N
- Which one of the following binary liquid mixtures exhibits positive deviation from Raoult's law?  
a) Acetone + chloroform      b) water + nitric acid      c) HCl + water                      d) ethanol + water
- Which one of the following has highest hydration energy?  
a)  $MgCl_2$                       b)  $CaCl_2$                       c)  $BaCl_2$                       d)  $SrCl_2$
- The least stable conformer of n-butane is  
a) Staggered                      b) Gauche                      c) Eclipsed                      d) Fully eclipsed
- Which of the following is aliphatic saturated hydrocarbon?  
a)  $C_8H_{18}$                       b)  $C_9H_{18}$                       c)  $C_8H_{14}$                       d) All of these
- The Van't Hoff factor (i) for a dilute aqueous solution of the strong electrolyte barium hydroxide is  
a) 0                      b) 1                      c) 2                      d) 3
- 2-butene on chlorination gives  
a) 1-chlorobutane      b) 1,2-dichlorobutane      c) 1,1,2,2-tetrachlorobutane      d) 2,2,3,3-tetrachlorobutane

## Part B

Answer any three of the following, Q.No. 15 is compulsory

3 x 2 = 6

- Give any two similarities between lithium and magnesium.
- Define term isotonic solution.
- What is molal depression constant?
- Write the reaction of acetylene with ozone.
- Give the systematic names for the following. i) milk of magnesia                      ii) washing soda

## Part C

Answer any three of the following: Q.No. 20 is compulsory

3 x 3 = 9

- Give reasons for the anomalous behaviour of beryllium.
- What are the limitations of Henry's law?
- How will you prepare the following compounds from benzene? i) nitrobenzene      ii) BHC
- How does Huckel rule help to decide the aromatic character of a compound?
- Calculate the molality of a solution containing 7.5 g of glycine ( $NH_2CH_2COOH$ ) dissolved in 500g of water.

## Part D

Answer all the questions.

2 x 5 = 10

- A. i) Why sodium hydroxide is much more water soluble than sodium chloride?  
ii) Give the uses of Gypsum.      OR  
B. State Raoult's law and obtain expression for lowering of vapour pressure when nonvolatile solute is dissolved in solvent.
- A. i) Write Wurtz reaction.  
ii) Write the chemical equation for each of the reaction involved in solvay process of preparation of sodium carbonate.      OR  
B. i) Suggest a simple chemical test to distinguish propane and propene.  
ii) State and explain Markovnikoff's rule with suitable example.      SSM-11-CHEM EM - SINGLE