

Time: 2.45 hours	Essay Type	Marks = 63
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**Part-I**

- 2. Write short answers to any Five (5) questions : 10**
- Define Organic and In-Organic Chemistry.
  - Define Tri-atomic and Hetero-atomic Molecule and give one example to each.
  - Find out the molecules in 9 gram of water.
  - Write the electronic configuration of Phosphorus ion  ${}_{15}^{31}\text{P}^{3-}$  and how many neutrons are in it?
  - For what purpose U-235 is used?
  - What are the defects of Rutherford's atomic model?
  - Describe the classification of Dobereiner's triads and give one example.
  - Define Shielding Effect. Describe its trend along the period.
- 3. Write short answers to any Six (6) questions : 12**
- What are the elements arranged in group 3 to 12 called?
  - Why a Covalent bond becomes polar?
  - Define Diffusion.
  - What is absolute zero temperature?
  - What is Allotropy?
  - Write down example of a solution in which solute is liquid and solvent is gas.
  - How one molar solution is prepared?
  - Define the term vapour pressure.
  - Define Colloid.
- 4. Write short answers to any Five (5) questions : 10**
- Define oxidation state with example.
  - Define redox reactions.
  - Find out oxidation number of nitrogen in  $\text{HNO}_3$  when:  
 $\text{H} = +1, \text{O} = -2$
  - Define weak electrolytes and give an example.
  - How the half cells of galvanic cell are connected? What is the function of salt bridge?
  - Define metallic character and give an example.
  - Write down two uses of gold.
  - Why Platinum is used for making jewelry?

**Part-II**

Note: Attempt any THREE questions.

- (a) Write down any three differences between Atomic Number and Mass Number. 3  
(b) Describe the Rutherford's Atomic Model. 4
- (a) Define Group and explain them in periodic table. 3  
(b) Define Covalent bond and write its types with one example of each. 4
- (a) Differentiate between Amorphous solid and Crystalline solid. 3  
(b) Discuss the effect of temperature on solubility. 4
- (a) Differentiate between Oxidizing agents and Reducing agents with the help of an example. 3  
(b) Write down four chemical properties of metals. 4
- (a) Define saturated solution, how it is prepared. 3  
(b) Give comparison of Electrolytic and Galvanic cell. 4

**Part-III**

(Practical Part)

Note: Attempt any TWO questions.

- (i) Which material is required for the sublimation of Ammonium Chloride? 2  
(ii) Write the procedure to determine the melting point of Naphthalene. 3
- (i) Make a list of material to prepare 0.1 molar solution of Sodium Carbonate ( $\text{Na}_2\text{CO}_3$ ). 2  
(ii) Describe the procedure to prepare 100  $\text{cm}^3$  of 0.1 molar solution of Sodium Hydroxide ( $\text{NaOH}$ ). 3
- (i) Write apparatus to prepare 100  $\text{cm}^3$  of 0.01M Oxalic acid solution from the given 0.1 M solution. 2  
(ii) Write procedure to perform that temperature affects the solubility of solids. 3