

(Group-I)

Note: Section I is compulsory. Attempt any THREE questions from Section II and any TWO parts from Section III.

SECTION-I

2. Write short answers to any FIVE questions: (2×5=10)

- Define octet rule.
- Define non-polar covalent bond and give an example.
- Define hydrogen bonding.
- State Boyle's law.
- What is meant by condensation?
- Define diffusion.
- Why HF is a weak acid?
- Write down two chemical properties of non-metals.

3. Write short answers to any FIVE questions: (2×5=10)

- Differentiate between Physical Chemistry and Biochemistry.
- Define empirical formula and molecular formula.
- Write two difference between Ion and Atom.
- Write the electronic configuration of "P".
- State any two properties of cathode rays.
- Complete the chemical equation
 ${}^9_4\text{Be} + {}^4_2\text{Be} \rightarrow \text{-----}$
- Define electron affinity with an example.
- Define ionization with an example.
- Write names of any four elements of group 17.

4. Write short answers to any FIVE questions: (2×5=10)

- What is alloy? Give an example.
- What is percentage $\left(\% \frac{m}{m}\right)$?
- What is tyndall effect?
- What is the reason for the difference between solution and colloids?
- Why O_2 is necessary for rusting?
- Why an iron grill is painted frequently?
- Why galvanizing is done?
- What is the difference between valency and oxidation state?

SECTION-II

(Each part 'a' has 3 marks and part 'b' has 4 marks)

5.(a) Calculate the gram molecule (number of moles) in 40g of phosphoric acid (H_3PO_4)

(b) Write down any four differences between compound and mixture.

6.(a) Write any three applications of isotopes.

(b) Describe the important features of Modern Periodic Table.

7.(a) What is meant by Charles' law? Discuss its experimental verification.

(b) Describe the properties of ionic compounds.

8.(a) Write three factors which affect the solubility of solute.

(b) Write four physical properties of non-metals.

9. (a) Explain oxidation and reduction reaction with the help of an example.

(b) Explain the method of electroplating with the help of diagram.

SECTION-III

10.(a)i. Write two uses of burette. 2

ii. Write the procedure to purify ammonium chloride by sublimation process. 3

(b) i. Which material is required for the preparation of 0.1 M oxalic acid solution having 250 cm^3 volume? 2

ii. Write the procedure for the preparation of 0.1 M oxalic acid solution having 250 cm^3 volume. 3

(c) i. Write the material which is required for the preparation of pure copper sulphate crystals from impure copper sulphate. 2

ii. 0.1 M sodium carbonate is given to you. How much volume of 0.1 M sodium carbonate is required to prepare 0.01 M 100 cm^3 solution? 3