

Chemistry

Note: Time allowed for Section-B and Section-C is 2 Hours and 45 minutes.

SECTION-B

Q2: Attempt any EIGHT parts. Each part carries FOUR marks.

- 1) Differentiate between physical chemistry and analytical chemistry.
- 2) Predict the number of proton and neutrons in $^{14}_8\text{C}$ and $^{37}_{17}\text{Cl}$.
- 3) Write factors which affect the ionization energies of atoms?
- 4) How many valence electrons are present in the following elements?
(a) Barium (b) Carbon (c) Magnesium (d) Krypton
- 5) Draw diagram to show the ionic bond in MgO ?
- 6) A gas occupies 4.31 liters at a pressure of 0.755 atm. Determine the volume if the pressure is increased to 1.25 atm.
- 7) Identify the solute and solvent, alcohol in water and carbonated drink.
- 8) Calculate the molarity of a solution containing 0.5 moles of HCl in 1.5 dm^3 .
- 9) Determine the oxidation number of hydrogen in the following compound.
(a) HCl (b) NaH
- 10) Explain cell reaction in voltaic cell. Write half-cell reactions, and overall reaction.
- 11) Interpret the chemical reaction between:
(i) Potassium and iodine (ii) Hydrogen and iodine

SECTION-C Marks: 24

Note: Attempt any **THREE** questions. All questions carry equal marks.

- Q3: (a) Calculate gram molecular mass of H_2SO_4 .
(b) What do you know about Auf-Bau's principle? How many electrons can accommodate in M shell of an element?
- Q4: (a) In how many categories 7th period elements are classified?
(b) How ionic bond is formed between metal atom and non-metals atom. Explain with the help of example.
- Q5: (a) Explain solid state with reference to attractive forces, motion and rigidity.

(b) Complete the following table?

Class of Colloid	Phase	Example
Gell	?	?
?	?	Butter

- Q6: (a) Explain how Alloying and cathodic protection helps to prevent corrosion.
(b) Explain the formation of cations from the given elements Na, Ca and Al?