

"Section-B"

Marks: 40

Q.2. Write short answers to any ten (10) of the following parts. All parts carry equal marks.

- (i) The mass of 5 moles of an element X is 60g. Calculate the molar mass of this element.
- (ii) Name any four properties of cathode rays.
- (iii) Differentiate between atomic and molecular orbitals.
- (iv) Why high pressure and low temperature make the gases non-ideal?
- (v) Why water droplet is spherical?
- (vi) Differentiate between crystalline and amorphous solids.
- (vii) Calculate K_c for the synthesis of ammonia at 500 °C. $K_p = 1.44 \times 10^{-5}$
- (viii) What is Leveling Effect?
- (ix) Write the names of any four factors affecting the rate of reaction.
- (x) Define osmosis and give it applications in daily life.
- (xi) Differentiate between bonding and anti-bonding orbitals.
- (xii) Why evaporation of a liquid causes cooling?
- (xiii) Explain MOT diagram of Hydrogen molecule.

"Section-C"

Marks: 27

Note: - Answer any three (3) questions. All questions carry equal marks.

- Q.3. (a) Explain Mosley's Law. (4)
- (b) What are X-rays? How are these rays produced? (5)
- Q.4. (a) Explain the kinetic molecular interpretation of solids. (5)
- (b) What are colloids? (4)
- Q.5. (a) Write the application of osmosis in daily life. (6)
- (b) What is solubility product constant? (3)
- Q.6 (a) What is hybridization? Explain sp^3 hybridization with example. (5)
- (b) Discuss the equilibrium of a sparingly soluble salt. (4)