

**Total No. of Pages : 02**

**Total No. of Questions : 11**

**B.Sc. (Honours) (Chemistry) (Sem.-1)**

## INORGANIC CHEMISTRY-I

**Subject Code : BHCL-101-19**

**M.Code : 77223**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of EIGHT questions carrying TWO marks each.
2. SECTION-B contains EIGHT questions carrying FOUR marks each and students have to attempt any SIX questions.
3. SECTION-C will comprise of two compulsory questions with internal choice in both these questions. Each question carries TEN marks.

## SECTION-A

**1) Answer briefly :**

- What is the significance of  $\psi$ ?
- What is the Pauli's Exclusive Principle?
- Derive the De-Broglie equation.
- What is the Effective nuclear charge?
- Explain the radius ratio rule.
- Explain the lattice ratio rules?
- Explain the lattice energy.
- Explain the hybridization of  $\text{PCl}_5$

**SECTION-B**

- 2) Explain the Slater rules.
- 3) Draw radial and angular distribution curves.
- 4) Explain the Hund's Rule of multiplicity.
- 5) Explain the structure of Zinc blende.
- 6) Explain the Born-Haber cycle.
- 7) Write a short note on high temperature semiconductors.
- 8) Write a note on LCAO method.
- 9) Explain the Schrödinger's wave equation.

**SECTION-C**

- 10) Explain the variation nuclear charge in periodic table.

**OR**

Explain molecular orbital diagram of CO.

- 11) Explain the crystal structure of Perovskite.

**OR**

Explain the shape of s and p orbitals.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**