

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.

B.Sc.(Chemistry) END SEMESTER EXAMINATIONS NOVEMBER -2023
SEMESTER - I

22UCHCT1001 - Basic Concepts in Inorganic Chemistry

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. State Paulis exclusion principle. Indicate the usefulness of the principle using an example.
2. What are the limitations of Bohr's theory?
3. Lanthanides and Actinides are placed in separate rows at the bottom of the periodic table. Explain the reason for this arrangement.
4. What is the pauling and Mulliken scale of electronegativity?
5. Explain the coordinate bond formation between BF_3 and NH_3 .
6. Calculate the lattice energy of NaCl using Born-Haber cycle.
7. Discuss in brief on packing of ions in crystals.
8. Write a note on
 - i) Common ion effect and
 - ii) Solubility Product

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Explain various quantum numbers which completely specify the electron of an atom.
10. Explain the following terms.
 - a) Ionization potential
 - b) Electron affinity
 - c) Electro negativity
 - d) Inert pair effect
 - e) Covalent radii
11. Draw the Crystal Structure of zinc blende and cesium chloride and explain.
12. Write short notes on
 - a) Schottky defect
 - b) Frankel defect.
13. Discuss the following with suitable examples.
 - a) Lewie theory of acids and bases
 - b) HSAB principle
 - c) Usanovich theory of acids and bases.

(4+2+4)
