

**2 MN 60401**

FOUR YEAR B.Sc. (Honours) (CBCS) DEGREE EXAMINATION, APRIL/MAY 2024.

SECOND SEMESTER

Chemistry (Minor)

Paper I- GENERAL AND INORGANIC CHEMISTRY

(w.e.f. 2023-24 Admitted Batch)

Time : Three hours

Maximum : 70 marks

(No additional sheet will be supplied)

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SECTION A — (5 × 4 = 20 marks)

Answer any FIVE of the following.

1. Define and explain ionic radii.
2. Write short notes on Pauli's exclusion principle.
3. Write short note on Electroaffinity.
4. Discuss thermal stability of typical ionic compounds.
5. Write the effect of electronegativity on bonding.
6. Explain the LCAO Method of Molecular Orbital Theory with suitable example.
7. Explain briefly about Conductors, Semi conductors and Insulators.
8. Write short notes on dipole — dipole interactions.
9. Explain Lewis theory with suitable examples.
10. Define and explain pH.

SECTION B — (5 × 10 = 50 marks)

Answer FIVE of the following.

11. Write a brief note on IUPAC nomenclature and group number, horizontal, vertical of the periodic table.
- Or
12. Explain the Classification of Long form of Periodic table into different Blocks.

13. Explain the factors favouring the formation of ionic compounds.

Or

14. Explain Born-Haber Cycle of enthalpy of formation of ionic compound.

15. Explain the structures of  $\text{SF}_4$  and  $\text{ICl}_4^-$  by VSEPR model.

Or

16. Construct and explain MO diagram for hetero nuclear diatomic molecule of NO.

17. What is Hydrogen Bond? Explain its types with suitable examples.

Or

18. Write a brief note on Valence bond theory of metals.

19. Explain Briefly about the theories of Acids and Bases with examples.

Or

20. HSAB principle and its importance.

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