

## PANJAB UNIVERSITY, CHANDIGARH

### B.Sc. (GENERAL) PART—I

#### SEMESTER-I

#### PAPER-I : INORGANIC CHEMISTRY-A

Max. Marks : 22+3

Time : 3 Hrs.

30 hrs. (2 hrs. per week)

(3 periods/week)

#### OBJECTIVE OF THE COURSE

To teach the fundamental concepts of Chemistry and their applications. The syllabus pertaining to B.Sc. (General) (Semester System) in the subject of Chemistry has been upgraded as per provision of the UGC module and demand of the academic environment. The course contents have been revised from time to time as per suggestions of the teachers of the Chemistry working in the Panjab University, Chandigarh and affiliated colleges. The syllabus contents are duly arranged unit wise and contents are included in such a manner so that due importance is given to requisite intellectual and laboratory skills.

#### UNIT-I

##### Atomic Structure

8 Hrs.

Idea of de Broglie matter waves, Heisenberg uncertainty principle, atomic orbitals, Schrodinger wave equation, significance of  $\psi$  and  $\psi^2$ , quantum numbers, radial and angular wave functions and probability distribution curves, shapes of *s*, *p*, *d* orbitals. Aufbau and Pauli exclusion principles, Hund's multiplicity rule, electronic configurations of the elements and ions.

#### UNIT-II

##### Periodic Properties

7 Hrs.

Position of elements in the periodic table; effective nuclear charge and its calculations Atomic and ionic radii, ionization energy, electron affinity and electronegativity - definition, methods of determination or evaluation, trends in periodic table and application in predicting and explaining the chemical behaviour.

#### UNIT-III

##### Chemistry of Noble Gases and *s*-Block Elements

7 Hrs.

Chemical properties of the noble gases, chemistry of xenon, structure and bonding in xenon compounds. Comparative study, diagonal relationships, salient features of hydrides, solvation and complexation tendencies including their function in biosystems, an introduction to alkyls and aryls.