

**Chandigarh Engineering College, CGC- Landran, Mohali**  
Department of Applied Sciences

**Assignment No.1**

**Max Marks: 10**

**Subject and Subject code:** Chemistry-1(Theory) (BTCH101-23)

**Semester:** 1<sup>ST</sup>

**Date on which assignment given** 21-09-2023 **Date of submission of assignment:** 28-09-2023

**Course Outcomes: Student will be able to**

CO1 interpret concepts related to atomic and molecular structure at orbital level as well as categorize various intermolecular forces.

CO2 infer about thermodynamic functions, chemical equilibria, water chemistry and corrosion.

CO3 interpretation of data by using different spectroscopic techniques and its daily life applications.

CO4 explain and distinguish different periodic properties of elements such as ionization energy, electron affinity, electronegativity, oxidation state and polarizability

CO5 classify major organic chemical reactions used for the synthesis of molecules as well as drugs

CO6 Illustrate three dimensional arrangements and isomers possible for a molecule and their properties

**Bloom's Taxonomy Levels**

L1- Remembering, L2 - Understanding, L3- Applying, L4 - Analyzing, L5 - Evaluating, L6 - Creating

Assignment related to COs		Relevance to CO No.	Bloom's Taxonomy Levels
Q1.	Discuss the mechanism of SN1 and SN2 reactions by taking one example (2 marks)	CO5	L6
Q2.	a) Discuss the molecular geometries of the following : i) BF <sub>3</sub> ii) PCl <sub>5</sub> (2 Marks) b) Explain the reason: "Electron affinity of N is almost zero while that of F is very high". (2 Marks)	CO4	L1 L2
Q3.	a) What is crystal field theory? How does this theory account for the fact that [CoF <sub>6</sub> ] <sup>3-</sup> is paramagnetic but [Co (NH <sub>3</sub> ) <sub>6</sub> ] <sup>3+</sup> is diamagnetic though both are octahedral. (2 Marks) b) Derive the van der Waals equation for describing P-V-T relationship in real gases. (2 marks)	CO1	L1 L2 L3

Course Co-ordinator

HOD Applied Sciences

IQAC Member