

**B.Sc. Biotechnology: Semester-II**  
**BST 203 Chemistry II**

**Teaching Scheme**

Lectures: 3 hrs/Week

Tutorials: 1 hr/Week

Credits: 4

**Examination Scheme**

Class Test -12Marks

Teachers Assessment - 6Marks

Attendance - 12 Marks

End Semester Exam - 70 marks

**Prerequisite:** - General knowledge of Chemistry

**Course Objectives:**

- 1.To give an overview of Chemical kinetics
- 2.To give basic knowledge of chemicals and their reactions
- 3.To have an overview of mathematical characteristics of simple chemical reactions
- 4.Aromatic electrophilic substitution- general pattern of the mechanism,
- 5.Activating and deactivating substituents
- 5.To explain the complexation tendencies including their function in biosystems

**Detail Syllabus**

**Module-1**

Chemical kinetics and its scope, rate of a reaction, Order of the reactions. Concentration dependence of rates, mathematical characteristics of simple chemical reactions-zero order, first order, second order, pseudo order, half life and mean life.

**Module-2**

Aromatic electrophilic substitution- general pattern of the mechanism, Mechanism of nitration, halogenation, sulphonation, mercuration and Friedel-Crafts reaction, Activating and deactivating substituents, orientation and ortho/para ratio.

**Module-3**

s-Block Elements Comparative study, diagonal relationships, salient features of hydrides, solvation and complexation tendencies including their function in biosystems, and introduction to alkyls and aryls.

p-Block Elements Comparative study (including diagonal relationship) of groups 13-17 elements, compounds like hydrides, oxides and halides of groups 13-16, hydrides of boron diborane and higher boranes, borazine, borohydrides.

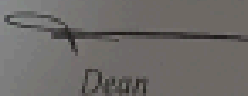
**Text and Reference Books**

- 1.A Textbook of Physical Chemistry, A. S. Negi, S. C. Anand
- 2.Physical Chemistry, Gilbert William Castellan
- 3.Physical chemistry, Walter John Moore
- 4.Organic Chemistry, Benjamin List, Keiji Maruoka
- 5.Advanced Organic Chemistry, 4th ed. Part A: Structure and Mechanisms F. Carey and R. Sundberg, Kluwer Academic



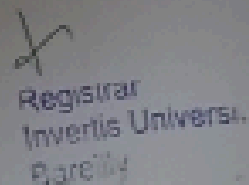
Head

Department of Biotechnology  
Invertis University, Bareilly (U.P.)



Dean

Faculty of Science  
Invertis University, Bareilly (U.P.)



Registrar  
Invertis University,  
Bareilly