

ORGANIC CHEMISTRY (BS-ADP 6th Semester)

Module Code:	Chem-325
Module title:	Reaction Mechanism-I
Name of Scheme:	BS-ADP 6th Semester
Department:	School of Chemistry
Faculty:	Science
Module Type:	Compulsory
Module Rating:	2 Credits

OBJECTIVES:

To grasp ideas about the mechanisms, basic rules and principles working behind different types of electrophilic and nucleophilic substitutions and free radical reactions of organic compounds.

SYLLABUS OUTLINES:

1. Aromatic Substitution reactions

a. Electrophilic Aromatic Substitutions:

General mechanism (kinetic, isotopic and spectroscopic evidences), nitration, sulfonation, halogenation, Friedel-Crafts alkylation and acylation, orientation and reactivity; poly-substitution reactions of aromatic compounds.

b. Nucleophilic Aromatic Substitutions:

Addition and elimination mechanism, Benzyne mechanism, Radical mechanism, Sandmeyer reaction and its examples.

2. Free Radical Reactions

Introduction, generation methods, relative stability, structure, free radical reactions and industrial applications.:

RECOMMENDED BOOKS:

1. Organic Chemistry, Vol. I (6th Ed.) and II (5th Ed.) by I.L. Finar, Pearson Education (Singapore) Pvt. Ltd. 2008.
2. March's Advance Organic Chemistry: Reactions, Mechanisms and Structures. (6th Ed.) by M.B. Smith and J. March, Wiley, 2007.
3. A Text-Book of Organic Chemistry by M. Younas, ILMI, Pakistan.
4. Organic Chemistry, (5th Ed.) by S.H. Pine, McGraw Hill, New York, USA, 1987.
5. Organic Chemistry, (6th Ed.) by Francis A. Carey, McGraw Hill, USA, 2005.
6. Organic Chemistry, (6th Ed.) by R.T. Morrison, R.N. Boyd and R.K. Boyd, Benjamin Cummings, 1992.
7. Modern Synthetic Reactions, (2nd Ed.) by H.O. House, W.A. Benjamin Inc., Menlo Park, CA.
8. Principals in Organic Synthesis, by R.O.C. Norman and M.J. Coxon, Chapman and Hall, 1993.
9. Organic Chemistry, by Jonathan Clayden, Nick Greeves and Stuart Warren, Oxford University Press, 2000.