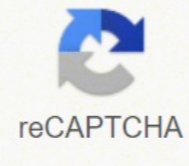




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Books for JEE Main and JEE Advanced Chemistry

S.No	Authors /Publisher	Name of Books
1	O.P. Tandon	Physical Chemistry
2	P. Bahadur	Numerical Chemistry
3	Bruce H. Mahan	University Chemistry
4	R.C. Mukharjee	Numerical Chemistry
5	P. Bahadur (For Reading Theory)	Physical Chemistry
6	P.W. Atkins	Physical Chemistry
7	Bruce H. Mahan	University Chemistry
8	Ebbing	General Chemistry
9	O.P. Agarwal	IITJEE Chemistry
10	NCERT	Chemistry XI, XII

Organic Chemistry

S.No	Authors /Publisher	Name of Books
1	O.P. Tandon	Organic Chemistry
2	Paula Bruice Yurkanis	Organic Chemistry
3	Organic Chemistry by MORRISON & BOYD	Organic Chemistry
4	Arihant Prakashan	Organic Chemistry
5	Solomons	Organic Chemistry
6	I. L. Finar	Organic Chemistry Volume 1
7	Bahal & Bahal	Organic Chemistry
8	Peter Skyes	Organic Chemistry
9	J.D March	Organic Chemistry
10	M. S. Chauhan	Concept of Organic Chemistry

Inorganic Chemistry

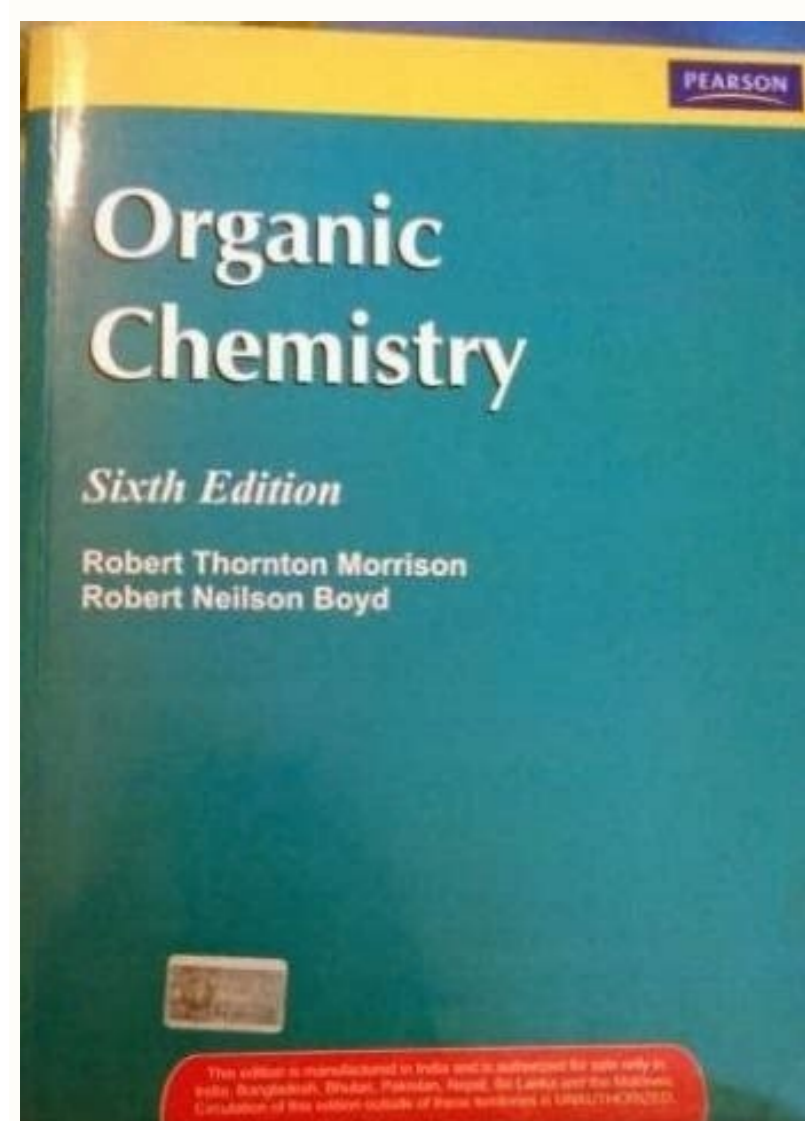
S.No	Authors /Publisher	Name of Books
1	NCERT	Chemistry XI & XII
2	Arihant Prakashan	Inorganic Chemistry
3	O.P. Tandon	Inorganic Chemistry
4	J.D. Lee	Concise Inorganic Chemistry
5	J.D. Lee	Inorganic Chemistry

Books for JEE Main and JEE Advanced Physics

S.No	Authors /Publisher	Name of Books
1	H.C. Verma	Concepts of Physics Vol I and II
2	I.E. Irodov	Problems in General Physics
3	Halliday, Resnick & Walker	Fundamentals of Physics
4	By Halliday, Resnick & Walker	Fundamentals of Physics
5	H C Verma	Concept of Physics Volume 1 & Volume 2
6	Krotov	Aptitude Test Problems in Physics
7	Melkon and Parker	Advance physics
8	S.L. Loney	Dynamics of a Particle & of Rigid Bodies
9	I. E. Irodov	Problems in General Physics
10	V. Zubov & V. Shalnov	Problem in Physics
11	A. A Pinsky	Problems in physics
12	V. Zubov & V. Shalnov	Problem in physics
13	S. L. Loney	Elements of Dynamics Part I & II
14	Tipler	Physics Vols I & II
15	R. P. Feynman	Feynman Lectures on Physics
16	R. P. Feynman	The Feynman Lectures on Physics vols 1 & 2
17	L. A. Sena	A collection of questions and Problems in Physi

Books for JEE Main and JEE Advanced Mathematics

S.No	Authors /Publisher	Name of Books
1	R.D. Sharma	Maths XI & XII
2	S. L. Loney	Trigonometry
3	S. L. Loney	Co-ordinate Geometry
4	Hall Knight	Higher Algebra
5	I.A. Maron	Problems in Calculus of One Variable

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
INSTRUCTION DIVISION
Course Handout

Date: 01/08/2014

Course No: CHEM F312
Course Title: ORGANIC CHEMISTRY - I
Instructor-in-charge: Rajeev Sakhuja

1. Scope and objective of the course: To familiarize the students with basic mechanistic aspects of organic reactions including mechanistic types, thermodynamics and kinetics, the important intermediates involved in organic reactions, functional group chemistry.

2. Text Book: Tl: R. T. Morrison, R. Boyd and S. K. Bhattacharjee, Organic Chemistry, 7th edition

Reference Books: (R1) J. Clayden, N. Greeves, S. Warren, P. Wothers, Organic Chemistry

3. Course Plan:

Lec. No.	Learning objectives	Topics to be Covered	Text book, Chapter, Page no.
1-2	Basic terminology and representation of organic reactions	Homolytic, heterolytic fission of bonds, concept of electrophiles and nucleophiles, how to write organic reaction mechanisms, movement of arrows, curved and fish-hook arrows, examples	Tl: Ch 4, Pg 55-59 R1: Ch 5, pg 116-131
3-4	Reactive intermediates carbocations	Carbocations: Structure & stability, generation and reactions	Tl: Ch 4, pg 64-69
5	Reactive intermediates carbanions	Carbanions: Structure & stability, generation and reactions	Tl: Ch 4, pg 69-72
6	Reactive intermediates free radicals	Free radicals: Structure & stability, generation and reactions	Tl: Ch 4, pg 81-86
7-8	Reactive intermediates others	Carbenes, nitrenes: generation, stability, and fate	Tl: Ch 4, pg 72-78
9-12	Aromatic chemistry	Aromatic nucleophilic substitutions- S _N Ar mechanism & Benzyne mechanism, Aromatic electrophilic substitutions,	Tl: Ch 5C, pg 262-284, Ch 9, pg 488-502 R1: Ch 23, pg 589-604
13-16	Thermodynamics and kinetics of reactions	Thermodynamic and kinetic control, Hammond postulate, methods to determine mechanisms (Hammett equation, kinetic isotopic effect), examples	Tl: Ch 4, pg 97-102 R1 Ch 13, pg 319-330 Ch 22, pg 554-556 Ch 41, pg 1090-1101
17-20	Alkyl and aryl halides	Syntheses and reactions of alkyl and aryl halides	Tl: Ch 8, pg 426-462 Ch 9, pg 482-485
21-24	Alcohols, phenol and ethers	Syntheses, reactivity, applications of Grignard reagents for syntheses, diols, acid/base catalysed ring opening	Tl: Ch 10, Pg 507-537 Ch 11, pg 545-562 Lecture notes (epoxides)
25-28	Amines and nitro compounds	Syntheses, basicity and reactions	Tl: Ch 15, Pg 696-736 and Lecture Notes (Nitro)

