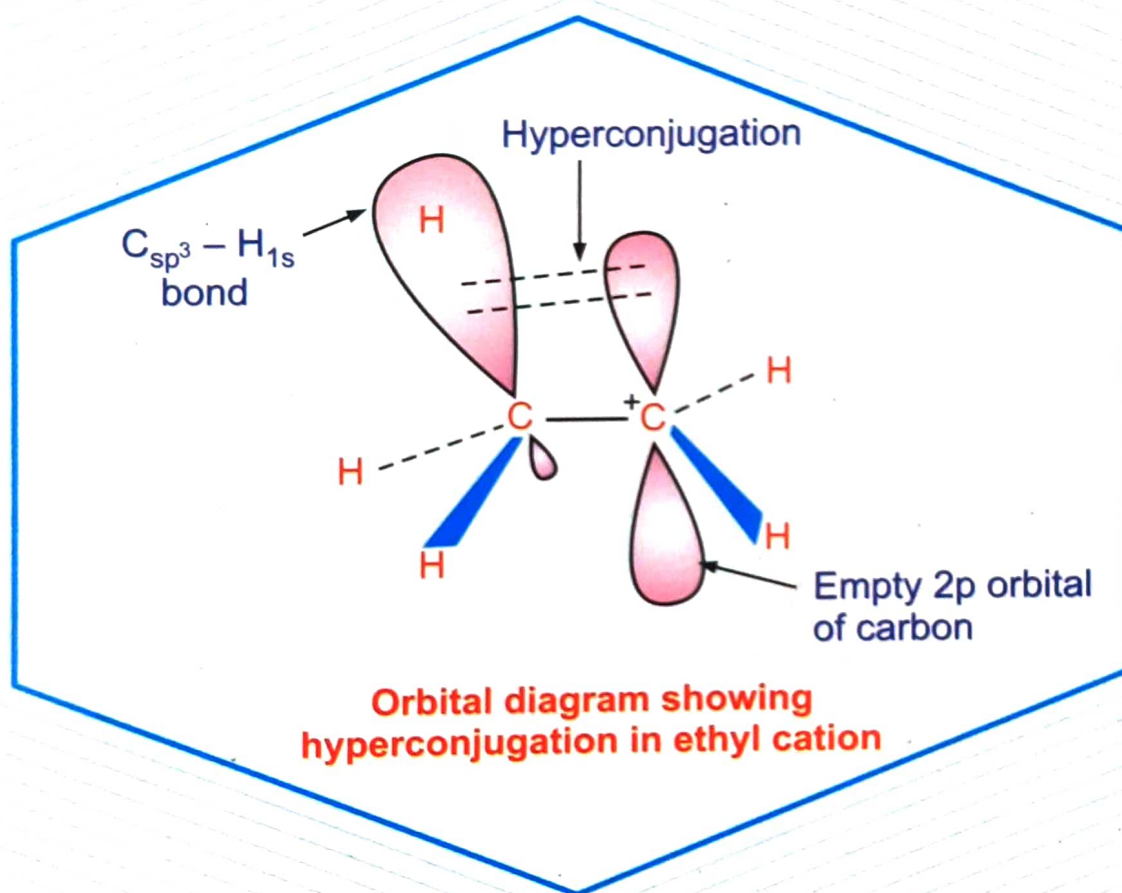


As per New Syllabus (CBCS Pattern) of
Shivaji University, Kolhapur
B.Sc. Part-I : Semester-I

ORGANIC CHEMISTRY

(CHEMISTRY : DSC-4A : PAPER-II)



Dr. PRAVINA B. PISTE
Dr. DNYANDEV N. ZAMBARE

Dr. ARJUN. S. KUMBHAR
Dr. CHANDRASHEKHAR P. MANE
Dr. AVINASH M. NALAWADE

A Text Book Of
ORGANIC CHEMISTRY

DSC-4A : Paper II

FOR
B.Sc. Part - I : Semester - I

***As Per New Revised CBCS Pattern Syllabus of
Shivaji University, Kolhapur w.e.f. June 2018***

Dr. Pravina B. Piste

M.Sc., Ph.D.
Associate Professor at Y.C. Institute of Science,
Satara
P.G. Recognized Teacher, Research Guide

Dr. Arjun S. Kumbhar

M.Sc., Ph.D.
Assistant Professor
P.G. Recognized Teacher, Research Guide
P.D.V.P. College, Tasgaon, Dist. Sangli

Dr. Dnyande N. Zambare

M.Sc., Ph.D.
Associate Professor
P.G. Recognized Teacher, Research Guide
Department of Chemistry
Kisanveer Mahavidyalaya, Wai

Dr. Chandrashekhar P. Mane

M.Sc., Ph.D.
Head, P.G. Recognized Teacher
Research Guide
Department of Chemistry
Lal Bahadur Shastri College, Satara

Dr. Avinash M. Nalawade

M.Sc., M.Phil., Ph.D.
Assistant Professor, P.G. Recognized Teacher, Research Guide
Lal Bahadur Shastri College, Satara

Price : ₹ 60.00

 **NIRALITM**
PRAKASHAN
ADVANCEMENT OF KNOWLEDGE

N4585

First Edition : August 2018

© : Authors

The text of this publication, or any part thereof, should not be reproduced or transmitted in any form or stored in any computer storage system or device for distribution including photocopy, recording, taping or information retrieval system or reproduced on any disc, tape, perforated media or other information storage device etc., without the written permission of Authors with whom the rights are reserved. Breach of this condition is liable for legal action.

Every effort has been made to avoid errors or omissions in this publication. In spite of this, errors may have crept in. Any mistake, error or discrepancy so noted and shall be brought to our notice shall be taken care of in the next edition. It is notified that neither the publisher nor the authors or seller shall be responsible for any damage or loss of action to any one, of any kind, in any manner, therefrom.

Published By:

NIRALI PRAKASHAN

Abhyudaya Pragati, 1312, Shivaji Nagar

Off J.M. Road, PUNE - 411005

Tel - (020) 25512336/37/39, Fax - (020) 25511379

Email : niralipune@pragationline.com

Polyplate

Printed By:

SHREE OM PRINTERS PVT. LTD.

Survey No. 28/25, Dhayri Near Pari Company,

Pune - 411 041

Tel - (020) 24690371

➤ **DISTRIBUTION CENTRES****PUNE**

Nirali Prakashan : 119, Budhwar Peth, Jogeshwari Mandir Lane,
Pune 411002, Maharashtra. Tel : (020) 2445 2044, 66022708,
Fax : (020) 2445 1538, Email: bookorder@pragationline.com,
niralilocal@pragationline.com

Nirali Prakashan : S. No. 28/27, Dhyari, Near Pari Company, Pune 411041
Tel : (020) 24690204 Fax : (020) 24690316
Email : dhyari@pragationline.com,
bookorder@pragationline.com

MUMBAI

Nirali Prakashan : 385, S.V.P. Road, Rasdhara Co-op. Hsg. Society Ltd.,
Girgaum, Mumbai 400004, Maharashtra
Tel : (022) 2385 6339 / 2386 9976, Fax : (022) 2386 9976
Email : niralimumbai@pragationline.com

➤ **DISTRIBUTION BRANCHES****JALGAON**

Nirali Prakashan : 34, V. V. Golani Market, Navi Peth, Jalgaon 425001,
Maharashtra, Tel : (0257) 222 0395,
Mob : 94234 91860

KOLHAPUR

Nirali Prakashan : New Mahadvar Road, Kedar Plaza, 1st Floor Opp. IDBI Bank
Kolhapur 416 012, Maharashtra. Mob : 9850046155

NAGPUR**Pratibha Book Distributors**

: Above Maratha Mandir, Shop No. 3, First Floor,
Rani Jhanshi Square, Sitabuldi,
Nagpur 440012, Maharashtra Tel : (0712) 254 7129

DELHI

Nirali Prakashan : 4593/15, Basement, Aggarwal Lane, Ansari Road,
Daryaganj, Near Times of India Building, New Delhi 110002
Mob : 08505972553

BANGALURU

Nirali Prakashan : Maitri Ground Floor, Jaya Apartments, No. 99, 6th Cross,
6th Main, Malleswaram, Bangaluru 560 003, Karnataka
Mob : +91 9449043034
Email: niralibangalore@pragationline.com

niralipune@pragationline.com | www.pragationline.com

Also find us on f www.facebook.com/niralibooks

Syllabus

Unit I: Fundamentals of Organic Chemistry

(08 Hrs)

Introduction, Curved Arrow Notations

Cleavage of Bonds: Homolysis and Heterolysis

Organic Molecular Species: Nucleophiles and Electrophiles

Electronic Displacements: Inductive Effect, Electromeric Effect, Resonance and Hyperconjugation Effect

Reactive Intermediates: Generation, Structure, Stability and Reactions of Carbocations, Carbanions and Carbon Free Radicals

Unit II: Stereochemistry

(09 Hrs)

Introduction, Types of Stereoisomerism, Optical Isomerism: Concept of Chirality, Elements of Symmetry, Optical Isomerism in Tartaric acid, 2, 3-Dihydroxybutanoic Acid, Enantiomerism, Diastereomerism and Meso Compounds, Geometrical Isomerism in $C=C$, $C=N$ and Alicyclic Compounds. Nomenclature of Stereoisomers: D and L, Erythro and Threo, R and S, E and Z.

Unit III: Aromaticity

(07 Hrs)

Introduction, Characteristic Properties of Organic Compounds, Meaning of Terms: Aromatic, Non-aromatic, Antiaromatic, Pseudoaromatic, Structure of Benzene: Kekule Structure, Resonance structure, M.O. Picture, Modern Theory of Aromaticity, Mechanism of Electrophilic Substitution Reactions: Nitration, Sulphonation, Halogenation and Friedel Craft Reaction.

Unit IV: Cycloalkanes, Cycloalkenes and Alkadienes

(06 Hrs)

Cycloalkanes: Introduction. Methods of Formation: (a) By Addition of Carbene to Alkene (b) Action of Metallic Sodium on Dihaloalkane (c) Diels-Alder Reaction (d) By Reduction of Aromatic Compounds,

Chemical Properties: (a) Photohalogenation (b) Catalytic Halogenations (c) Catalytic Hydrogenation (d) Effect of Heat (e) Reaction with Hydrogen Halide.

Cycloalkenes: Introduction, Methods of Formation from Cyclic Compounds, Chemical Properties: (a) Hydrogenation (b) Addition of Halogens and Halogen Acids, (c) Allylic Halogenations.

Alkadienes: Introduction, Classification, Buta-1, 3-diene: (a) Structure (b) Methods of Formation - From Cyclohexane, From Butane by Dehydrogenation, From Acetylene, From Butan-1, 3-diol, From Ethanol and Acetaldehyde (Industrial Method), Chemical Properties - (a) Reaction with Hydrogen Halide (b) Reaction with Halogens - With One Molar Equivalent of Halogens (Cl_2 or Br_2) (c) Diels-Alder Reaction (d) Reduction - Hydrogenation (e) Oxidation - Ozonolysis (f) Polymerization.



About the Authors

Dr. PRAVINA B. PISTE

M.Sc., Ph.D.

Associate Professor at Y.C. Institute of Science, Satara.

PG Recognized Teacher, Research Guide.

Dr. ARJUN S. KUMBHAR

M.Sc., Ph.D.

Assistant Professor, P.G. Recognized Teacher, Research Guide, P.D.V.P. College,

Tasgaon, Dist. Sangli

Dr. DNYANDEV N. ZAMBARE

M.Sc., Ph.D.

Associate Professor, P.G. Recognized Teacher, Research Guide, Department of Chemistry, Kisanveer Mahavidyalaya, Wai.

Dr. CHANDRASHEKHAR P. MANE

M.Sc., Ph.D.

Head, P.G. Recognized Teacher, Research Guide,

Department of Chemistry, Lal Bahadur Shastri College, Satara

Dr. AVINASH M. NALAWADE

M.Sc., M.Phil, Ph.D.

Assistant Professor, P.G. Recognized Teacher, Research Guide,

Lal Bahadur Shastri College, Satara

BOOKS AVAILABLE AT

PUNE

Nirali Prakashan

: Sur. No. 28/27, Dhayari-Katraj Road, Near Pari Company,
Dhayari, Pune - 411 041. Ph. (020) 24690204
Fax: (020) 24690316 • Email: bookorder@pragationline.com

KOLHAPUR

Nirali Prakashan

: New Mahadwar Road, Kedarling Plaza, 1 st floor,
Opp. I.D.B.I. Bank, Kolhapur. Mob. 98500 46155

Mehta Book Sellers

: Bhausingji Road, Kolhapur. Tel. (0231) 2541 881

Granth The Book World

: Rajarampuri 5 th lane, Kolhapur. Tel. (0231) 2544 353

Titus Book Depot

: Rajarampuri 1st lane, Kolhapur. Tel. (0231) 2522 546

SANGLI

Nirali Prakashan

: Haripur Road, Nandrekar Plot, Sangli. Mob. 99215 16852

G. R. Tamhankar
Book Sellers

: Saraf Naka, Sangli. Tel. (0233) 2329966

Sankapal Book Stall

: Kapad Peth, Near Church, Sangli.
Tel. (0233) 2326447

MIRAJ

Ratnakar Book Stall

: Deval Talkies, Miraj, Tel : (0233) 2222564

SATARA

Alankar Book Stall

: Opp. Science College, Satara.
Tel. (02162) 220456

Email: niralipune@pragationline.com • Website: www.pragationline.com

Also find us on  www.facebook.com/niralibooks

