

Text book of
Organic Chemistry

About the book

The Textbook of Organic Chemistry has been written with a aim of meeting the needs of third year students of B.Sc. of S.R.T.M. University Nanded.

The Contents are as per recommendations of the SRTMU Nanded CBCS Course. It deals with topics These are Heterocyclic Compounds, Synthetic drugs and dyes, Alkaloids, Vitamins and Pesticides. At the end of each chapter set of problems are given. The lucid language and well presented concepts will be of immense help to the students for a clear understanding of the subject.

About the Author



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He Worked as chairman, examiner and moderator at university examination.

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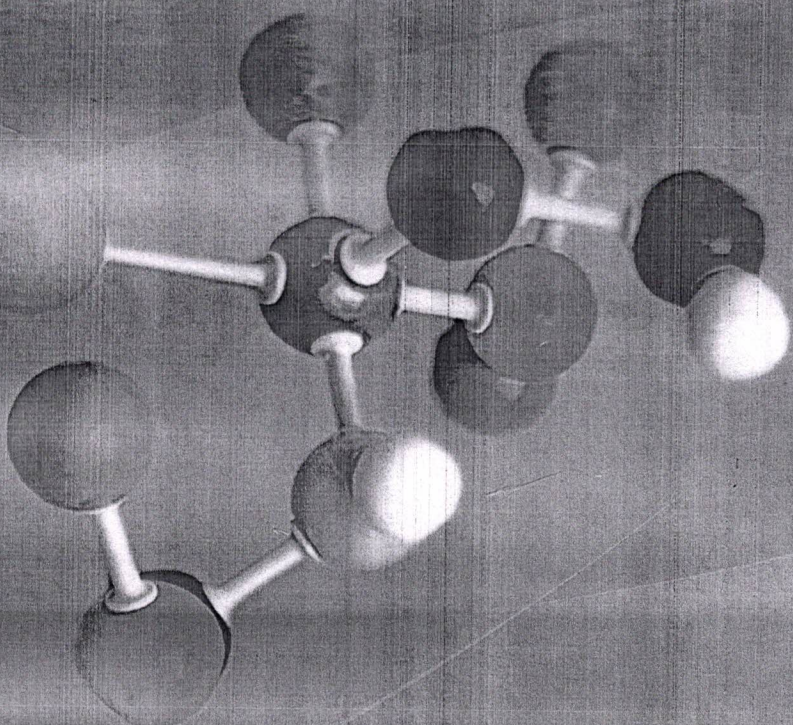
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Textbook of
Organic Chemistry

Semester - V

R.P. Giram



PREFACE

The textbook of organic chemistry has been written with a aim of meeting the needs of 3rd year students of B.Sc. (CBCS structure). The content are as per recommendation of University Grants Commission.

The present book deals with 4 topics. These include heterocyclic compounds, six membered heterocyclic compounds, synthetic drugs and dyes, alkaloids vitamins and pesticides.

Wherever necessary the mechanism of relevant organic reactions have been given.

In order to facilitate the understanding of the topics, each chapter has been divided into several sections.

At the end of each chapter, a set of problems are given. This procedure will be immense help to the students for clear understanding of each topic.

I am thankful to my colleges for making valuable suggestions.

I hope that this edition will come up to their as well as the students expectations.

Ramkishan P. Giram

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UNIT - I

Heterocyclic Compounds

..... 09-23

- i. Introduction, classification and nomenclature.
- ii. Molecular orbital structures, resonance, Structures and reactivity of furan. Pyrrole, thiophene and pyridine.
- iii. General mechanism of electrophilic substitution reactions of furan pyrrole thiophene and pyridine.

A. Five - membered heterocyclics

1. Furan : (Oxole)

- 1.1.1 Synthesis from : a) Music and b) Succinaldehyde

1.1.2 Physical Properties.

1.1.3 Chemical Properties

- a) Electrophilic Substitution reaction
 - i) Nitration
 - ii) Sulphonation
 - iii) Halogenation
 - iv) Friedel - craft's acylation
- v) Gattermann-koch reaction
- vi) Gomberg reaction
- vii) Reaction with n-butyl lithium
- b) Reduction
- c) Diels - Alder reaction

2. Pyrrole : (Azole)

1.2.1 Synthesis from :

- a) Acetylene
- b) Furan
- c) Succinimide

1.2.2 Physical properties

1.2.3 Chemical properties :

- a) Electrophilic substitution reaction
 - i) Nitration
 - ii) Sulphanation
 - iii) Halogenation
 - iv) Friedel - craft acylation
- v) Gattermann reaction
- vi) Reimer - Tiemann reactions
- vii) Coupling reaction
- b) Reduction
- c) Ring expansion
- d) Acidic character

3. Thiophene (Thiole)

1.3.1 Synthesis from :

- a) Acetylene
- b) n-butane
- c) Sodium Succinate

1.3.2 Physical properties

1.3.3 Chemical properties :

- a) Electrophilic Substitution reactions:
 - i) Nitration
 - ii) Sulphanation
 - iii) Halogenation
 - iv) Friedel-craft acylation
- v) Chloromethylation
- vi) Mercuration
- vii) Reaction with n-butyl lithium
- b) Reduction