



Hon. Shri. Babanrao Pachpute Vichardhara Trust's Group of Institutions
Faculty of Pharmacy

A/P-Kashti, Tal-Shrigonda, Dist-Ahmednagar, Pin- 414701
Approved by PCI, New Delhi, Affiliated to Savitribai Phule Pune University, Pune & MSBTE, Mumbai.
Website – www.parikrama.edu.in, Phone – 9766126772, Email – pariphr@gmail.com



Vision – 'To serve with high quality education for development of students as competent pharmacy professionals for the upliftment of socio-economic status in rural areas'

3.2.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher:

Sr. No	Name of the teacher	Title of the book/chapter s published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Calendar Year of publication	ISBN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher	Page no.
1	Dr.Nirmal S A	A Text Book of Herbal Drug Technology					2023	9789393304889	HSBPVTS,GOI, Faculty of Pharmacy Kashti	Brilliant Publication	1-4
2	Dr.Anbhule S	A Textbook of Medicinal Chemistry-I					2024	9789393304612	HSBPVTS,GOI, Faculty of Pharmacy Kashti	Brilliant Publication	5-8
3	Prof.Landage D A	A Text book of Pharmaceutical Marketing					2023	9789393304513	HSBPVTS,GOI, Faculty of Pharmacy Kashti	Brilliant Publication	9
4	Prof.Raykar M H	A Text Book Pharmaceutical Biotechnology					2023	9789393304902	HSBPVTS,GOI, Faculty of Pharmacy Kashti	Brilliant Publication	10-13
		A Text Book of Cosmetic Science					2024	9789393304513	HSBPVTS,GOI, Faculty of Pharmacy Kashti	Brilliant Publication	14-15

DTE Code: 5303
PCI code: 851

PUN Code: CPHA017210
AISHE Code: C-41322

AICTE ID: 1-12614931
MSBTE Code - 2022

About Brilliant Group

Brilliant group was formed in 1998 with vision to deliver unmatched business value to the customers through a combination of process excellence, quality framework and service delivery innovation.

We believe in providing the appropriate end to end solution that leverages technology. We are driven by highly trained staff, operating out of Nationwide Networks and practicing unique customer centric methodology.

Group has major focus on Information Technology, Insurance, Education and Manufacturing sectors of the economy.

Offices :

North America
2400 pleasant Hill Rd,
Duluth GA-30096
Phone: (770) 418-0630
Fax: (770) 418-1470

Australia

Benne long point
New South Wales 2000,
Sydney, Australia
Phone:(614) 14366050

Bangalore

No. 510, 4th Block,
1st Stage, HBR Layout,
Bangalore-560043
Karnataka, India
Phone: +91(80) 25435787



Office :

Puneet-Yash Arcade, 3rd Floor,
Opp. Hotel Kokan Express,
Near Kothrud Bus Stand,
Kothrud, Pune - 411038
Tel. : 7057488957 / 9156347572
8605467166
Website : www.brilliantpublication.co.in
Email : brilliant.publication@yahoo.com

Best Selling Titles in Pharmacy

1st Semester B. Pharmacy Text Books

1. Pharmaceutical Inorganic Chemistry	150
2. Pharmaceutical Analysis	175
3. Human Anatomy & Physiology	250
4. Pharmaceutics - I	175
5. Communication Skills	150

2nd Semester B. Pharmacy Text Books

1. Human Anatomy & Physiology II	230
2. Pharmaceutical Organic Chemistry I	160
3. Biochemistry	190
4. Pathophysiology	325
5. Computer Application in Pharmacy	210
6. Environmental Sciences	155

3rd Semester B. Pharmacy Text Books

1. Pharmaceutical Organic Chemistry II	130
2. Physical Pharmaceutics I	180
3. Pharmaceutical Microbiology	170
4. Pharmaceutical Engineering	250

1st Year Diploma Pharmacy (ER 2020)

Text Books

1. Pharmaceutics	250
2. Human Anatomy & Physiology	250
3. Social Pharmacy	260
4. Pharmaceutical Chemistry	250
5. Pharmacognacy	260

1st Year Diploma Pharmacy (ER 2020) Lab

Manuals

1. Pharmaceutics	215
2. Human Anatomy & Physiology	215
3. Social Pharmacy	190
4. Pharmaceutical Chemistry	180
5. Pharmacognacy	190

Practical Training Manual @ 250

Exit Entrance Examination @ 370

2nd Year Diploma Pharmacy (ER 2020)

Lab Manuals

1. Pharmacology	200
2. Community Pharmacy & Management	250
3. Biochemistry & Clinical Pathology	215
4. Pharmacotherapeutics	215
5. Hospital & Clinical Pharmacy	215

2nd Year Diploma Pharmacy (ER 2020)

Text Books

1. Pharmacology	280
2. Community Pharmacy & Management	240
3. Biochemistry & Clinical Pathology	270
4. Pharmacy Law & Ethic	270
5. Pharmacotherapeutics	270
6. Hospital & Clinical Pharmacy	300
7. Biochemistry Clinical Pathology	240
8. Pharmacy Law & Ethics	250

First Year Diploma Pharmacy(ER 2020)

Assignment & Field Visit Book

1. Pharmaceutics	70
2. Social Pharmacy	70
3. Pharmaceutical Chemistry	65
4. Pharmacognacy	70

2nd Year Diploma Pharmacy (ER 2020)

Assignment & Field Visit Book

1. Pharmacology	65
2. Community Pharmacy & Management	70
3. Biochemistry & Clinical Pathology	65
4. Pharmacy Law & Ethics	65
5. Hospital & Clinical Pharmacy	70

All Books Are Available On
Amazon & Flipkart

As Per PCI Regulations
Third Year B. Pharmacy Semester VI

A TEXTBOOK OF Herbal Drug Technology



- ◆ Dr. Sunil Nirmal
- ◆ Dr. Malarkodi Velraj
- ◆ Dr. Ramesh Vithoba Shinde
- ◆ Mr. Digvijaysinh Ramesh Kale



**BRILLIANT
PUBLICATION**

- **Shri Balaji Book Distributors** - B3/16, Ansari Road, Near Happy School Daryaganj New Delhi 110002 PH- 011 - 43000782, Mob- 7303339764
- **Deccan Educational & Social Welfare Society** - (Majed Shaikh) Chidri Ring Road, Airport Road, Behind Sri Siddhivinayak Drug House, Bidar Karnataka (585403). Mob No.: 8317264050.
- **Sai Book, Pune** - 9820108356.
- **Central Book Stall** - Rani Jhansi Square, Sita Buldi, Nagpur - 440012. Mob No.: 9823073969.
- **Laxmi pustakalaya** - near kotwali police station, Mahal, Nagpur
- **Kushal Book** - Lane No. 5, Parola Road Corner, Dhule. Contact : (02562) 280468, Mob No. : 9423916592.
- **Shri Samrtha Book Depo** - Police Chowky, behind Aurangpura, Gulmandi, Mob No.: 9422291564

Herbal Drug Technology

HSBPVTS Kashti



P 3281

As Per PCI Regulations
THIRD YEAR B PHARMACY
(SEMESTER VI)

3281
B

- This book is a comprehensive treatment of biodynamic agriculture, Indian systems of medicine
- Quality of raw materials, guidelines for the quality of herbal drugs
- Finds a balance between basic and advanced areas of knowledge in addition to general topics.
- The curriculum is comprehensive, written in understandable language, contains well-marked diagrams and important tables in the theoretical and practical parts.

- AUTHORS -

Dr. Sunil Nirmal
Principal,

Hon. Shri. Babanrao Pachpute
Vichardhara Trust's, Group of
Institutions, Faculty of Pharmacy,
Kashti. Pin - 414701.

Dr. Malarkodi Velraj
Professor,

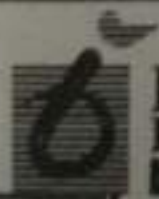
Department of Pharmacognosy,
School of Pharmaceutical Sciences,
Vels Institute of Science,
Technology and Advanced Studies,
Old Pallavaran, Chennai,
India. Pin-600117

Dr. Ramesh Vithoba Shinde
Principal,

Hon. Shri. Babanrao Pachpute
Vichardhara Trust's, Parikrama Diploma
in Pharmaceutical Sciences, Kashti,
Taluka- Shrigonda, Dist.- Ahmednagar,
State- Maharashtra,
India, Pin - 414701.

Mr. Digvijaysinh Ramesh Kale
Principal,

Shri Siddhivinayak Institute of Phar-
macy, Siddhatek, Tal- Karjat, Dist-
Ahmednagar. Pin-414403



**Brilliant
Publication**

Puneet Yash Arcade, 3rd Floor, Opp. Kokan Express,
Near Kothrud Bus Stand, Kothrud, Pune - 411038.
Mob No. - +91 7057488957 / 9156347572 / 8605467166

Declaration

- Herbal Drug Technology
- First Edition : 25 Dec 2023
- Publisher & Printer :
Brilliant Publication
Puneet Yash Arcade, 3rd Floor,
Opp. Kokan Express,
Near Kothrud Bus Stand,
Kothrud, Pune - 411038.
Mob No. - +91 7057488957 /
9156347572 / 8605467166

- Printing DTP by :
Brilliant Team

- © All Rights are reserved by
publisher

- ISBN No. :



9 789393 304889

Advisory Board

Dr. Vishal Bharat Babar
(M.Pharm, PHD)
Dattakala College of Pharmacy,
Pune

Dr. Ramesh D. Ingole
(M.Pharm PHD)
Pharamcy College, Pathri

Dr. Sanjay K. Bais
(M.Pharm PHD)
Fabtech College of Pharmacy,
Sangola

Prof. Sanjay Desai
(M.Pharm)
Sahyadri Shikshan Sanstha's
College of Pharmacy, Savarde

Prof. Sunil B. Chaudhari
(M.Pharm)
M B Patel Institute of Pharmacy,
Gondia

Prof. Avinash B. Thalkari
(M.Pharm, PHD)
Vasant Pharmacy, Kej

The text of this publication, or any part there of, 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, there from.

Content

1.	Raw Materials: Herbs.....	07
2.	Nutritional Supplements.....	86
3.	Herbal Excipients.....	120
4.	Evaluation of Herbal Drugs.....	134
5.	A general Introduction to the Medicinal Plant Industry.....	152



Dr Sanjay Prabhakar Bhor
Founder Brilliant Publication

About Brilliant Group

Brilliant group was formed in 1998 with vision to deliver unmatched business value to the customers through a combination of process excellence, quality framework and service delivery innovation.

We believe in providing the appropriate end to end solution that leverages technology. We are driven by highly trained staff, operating out of Nationwide Networks and practicing unique customer centric methodology.

Group has major focus on Information Technology, Insurance, Education and Manufacturing sectors of the economy.

Offices :

North America
2400 pleasant Hill Rd,
Duluth GA-30096
Phone: (770) 418-0630
Fax: (770) 418-1470

Australia

Benne long point
New South Wales 2000,
Sydney, Australia
Phone:(614) 14366050

Bangalore

No. 510, 4th Block,
1st Stage, HBR Layout,
Bangalore-560043
Karnataka, India
Phone: +91(80) 25435787



Best Selling Titles in Pharmacy

1st Semester B. Pharmacy Text Books

1. Pharmaceutical Inorganic Chemistry	150
2. Pharmaceutical Analysis	175
3. Human Anatomy & Physiology	250
4. Pharmaceutics - I	175
5. Communication Skills	150

2nd Semester B. Pharmacy Text Books

1. Human Anatomy & Physiology II	230
2. Pharmaceutical Organic Chemistry I	160
3. Biochemistry	190
4. Pathophysiology	325
5. Computer Application in Pharmacy	210
6. Environmental Sciences	155

3rd Semester B. Pharmacy Text Books

1. Pharmaceutical Organic Chemistry II	130
2. Physical Pharmaceutics I	180
3. Pharmaceutical Microbiology	170
4. Pharmaceutical Engineering	250

1st Year Diploma Pharmacy (ER 2020)

Text Books

1. Pharmaceutics	250
2. Human Anatomy & Physiology	250
3. Social Pharmacy	260
4. Pharmaceutical Chemistry	250
5. Pharmacognacy	260

1st Year Diploma Pharmacy (ER 2020) Lab

Manuals

1. Pharmaceutics	215
2. Human Anatomy & Physiology	215
3. Social Pharmacy	190
4. Pharmaceutical Chemistry	180
5. Pharmacognacy	190

2nd Year Diploma Pharmacy (ER 2020)

Lab Manuals

1. Pharmacology	200
2. Community Pharmacy & Management	250
3. Biochemistry & Clinical Pathology	215
4. Pharmacotherapeutics	215
5. Hospital & Clinical Pharmacy	215

2nd Year Diploma Pharmacy (ER 2020)

Text Books

1. Pharmacology	280
2. Community Pharmacy & Management	240
3. Biochemistry & Clinical Pathology	270
4. Pharmacy Law & Ethic	270
5. Pharmacotherapeutics	270
6. Hospital & Clinical Pharmacy	300
7. Biochemistry Clinical Pathology	240
8. Pharmacy Law & Ethics	250

First Year Diploma Pharmacy(ER 2020)

Assignment & Field Visit Book

1. Pharmaceutics	70
2. Social Pharmacy	70
3. Pharmaceutical Chemistry	65
4. Pharmacognacy	70

2nd Year Diploma Pharmacy (ER 2020)

Assignment & Field Visit Book

1. Pharmacology	65
2. Community Pharmacy & Management	70
3. Biochemistry & Clinical Pathology	65
4. Pharmacy Law & Ethics	65
5. Hospital & Clinical Pharmacy	70

*All Books Are Available On
Amazon & Flipkart*

Practical Training Manual @ 250

Exit Entrance Examination @ 370

Office Address : Puneet Yash Arcade, 3rd floor Opp. Hotel Kokan
Express, Near Kothrud Bus Stand, Kothrud, Pune - 411038
Factory Address : Anantprabha , D Wing, Opp. Accurate,
Dangat Industrial Estate, Shivane , Pune 23.

E-mail : brilliant.publication@yahoo.com | Website: www.brilliantpublication.co.in
MO. NO. - 8605467166 / 9699395893 / 8010476642 / 9834852072

- 📍 **Shri Balaji Book Distributors** - B3/16, Ansari Road, Near Happy School Daryaganj New Delhi 110002
PH- 011 - 43000782, Mob- 7303339764
- 📍 **Deccan Educational & Social Welfare Society** - (Majed Shaikh) Chidri Ring Road, Airport Road,
Behind Sri Siddhivinayak Drug House, Bidar Karnataka (585403). Mob No.: 8317264050.
- 📍 **Sai Book, Pune** - 9820108356.
- 📍 **Central Book Stall** - Rani Jhansi Square, Sita Buldi, Nagpur - 440012. Mob No.: 9823073969.
- 📍 **Laxmi pustakalaya** - near kotwali police station, Mahal, Nagpur
- 📍 **Kushal Book** - Lane No. 5, Parola Road Corner, Dhule. Contact : (02562) 280468, Mob No. : 9423916592.
- 📍 **Shri Samrtha Book Depo** - Police Chowky, behind Aurangpura, Gulmandi, Mob No.: 9422291564

As Per PCI Regulations
Second Year B. Pharmacy Semester IV

A TEXTBOOK OF

Medicinal Chemistry I



Medicinal Chemistry I

- ◆ Ms. Deepali Madhukarrao Wanode
- ◆ Prof. Swati Prakash Raut
- ◆ Dr. Sachin Jalindar Anbhule
- ◆ Prof. Giramkar Ankita Arjun



**BRILLIANT
PUBLICATION**

A TEXT BOOK OF

MEDICINAL CHEMISTRY-I

As Per PCI Regulations
SECOND YEAR B. PHARMACY
(SEMESTER IV)

- Medicinal chemistry is generally considered a discipline dealing with biological molecules, but it is essentially the chemistry of carbon compounds.
- A large number of organic compounds are either derived or completely synthesized in laboratories.
- This book discusses many such advanced compounds, their production processes, structures and properties.
- Some of the topics covered are drug design to combinatorial synthesis and parallel synthesis, application of compound collections, compound preparation molecular diversity assessment, etc.
- The ever-increasing need for advanced technologies is the reason driving research in this field recently.
- These selected concepts that are redefining medicinal and natural product chemistry have been introduced in this book.
- The extensive content presented in the book provides readers with a thorough understanding of the subject. It will serve as a resource guide for professionals, researchers and students working in the field.

- AUTHORS -

Ms. Deepali Madhukarrao Wanode
(Ph. D. Research Scholar)
Department of Pharmaceutical Sciences,
Rashtrasant Tukadoji Maharaj Nagpur
University, Nagpur

Prof. Swati Prakash Raut
(Assistant Professor)
VGSS's Eknath Sitaram Divekar College
of Pharmacy,
Varvand, Dist- Pune- 412215

Dr. Sachin Jalindar Anbhule
(Associate Professor)
HSBPVT's, Group of Institutions,
Faculty of Pharmacy,
Kashti, Ahmednagar-414701

Prof. Giramkar Ankita Arjun
(Assistant Professor)
HSBPVT's, Group of Institutions Faculty
of Pharmacy,
Kashti, Ahmednagar-414701



Puneet Yash Arcade, 3rd Floor, Opp. Kokan Express,
Near Kothrud Bus Stand, Kothrud, Pune - 411038.
Mob No. - +91 7057488957 / 9156347572 / 8605467166

Declaration

- Medicinal Chemistry I
- First Edition : 01 Jan 2024
- **Publisher & Printer :**
Brilliant Publication
Puneet Yash Arcade, 3rd Floor,
Opp. Kokan Express,
Near Kothrud Bus Stand,
Kothrud, Pune - 411038.
Mob No. - +91 7057488957 /
9156347572 / 8605467166
- **Printing DTP by :**
Brilliant Team
- © All Rights are reserved by
publisher
- ISBN No.



9 789339 304612

Advisory Board

Dr. Sanjay K. Bais
(M. Pharm Ph.D)
Fabtech College of Pharmacy,
Sangola

Prof. Sanjay Desai
(M. Pharm)
Sahyadri Shikshan Sanstha's
College of Pharmacy, Savarde.

Prof. Sunil B. Chaudhari
(M. Pharm)
M B Patel Institute of Pharmacy,
Gondia.

Mr. Kiran B. Patil (HOD)
M. Pharm (Pharmaceutics)
Swami Institute of Pharmacy
Abhona, Nashik.

Dr. Vijay D Tambe
(M. Pharm. Ph.D) Lecturer
"Pravara Rural Education Society's"
College of Pharmacy, Nashik.

The text of this publication, or any part there of, 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.

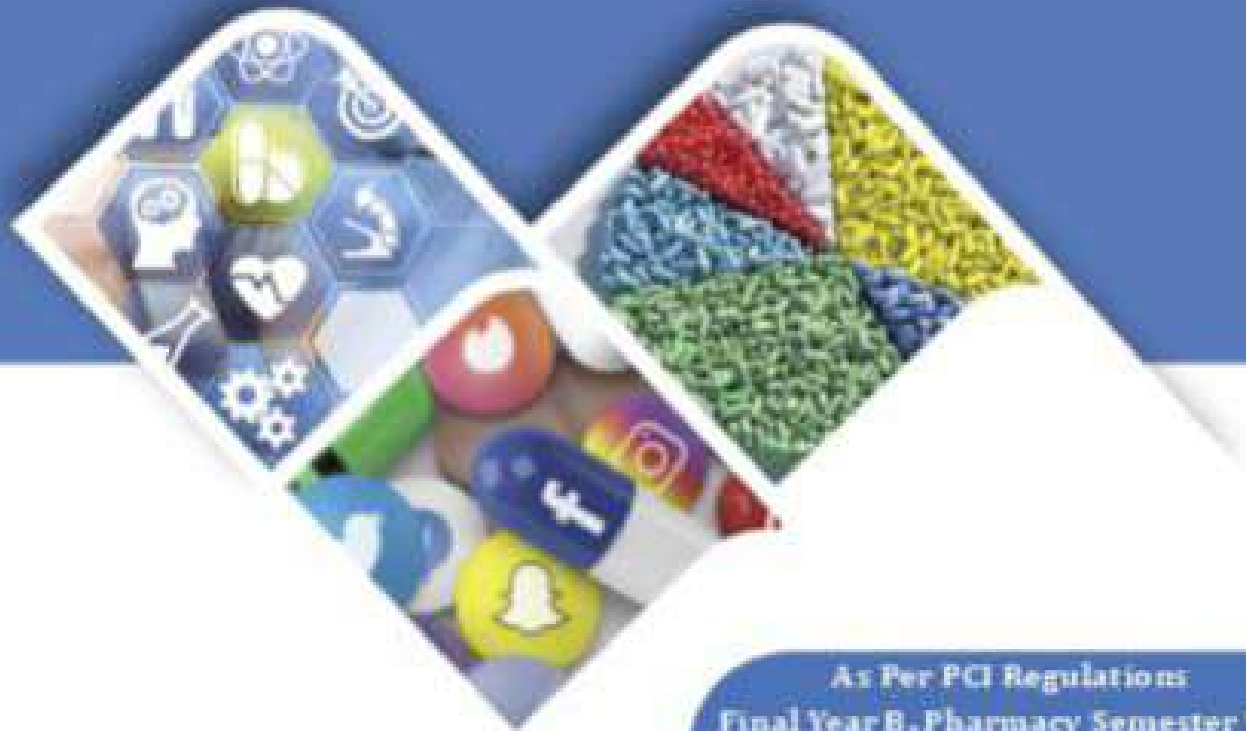
Every effort has been made to avoid errors or omissions in this publication. In spite of this, errors may have crept in. Any mistake, error or discrepancy so noted and shall be brought to our notice shall be taken care of in the next edition. It is notified that neither the publisher nor the authors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

INDEX

Chap 1. Introduction to medicinal chemistry.....	8
Chap 2. History and development of medicinal chemistry.....	11
Chap 3. Physico-chemical properties in relation to biological action.....	16
Chap 4. Introduction of the nervous system.....	34
Chap 5. Adrenergic neurotransmitters.....	37
Chap 6. Antiadrenergic drugs.....	45
Chap 7. Adrenergic antagonist(Sympatholytic).....	58
Chap 8. Cholinergic neurotransmitters.....	74
Chap 9. Agents that block cholinergic nervous system	91
Chap 10. Sedatives and hypnotics.....	106
Chap 11. Antipsychotics.....	125
Chap 12. Anticonvulsants.....	140
Chap 13. General anesthetic.....	157
Chap 14. Morphine and related drugs.....	170
Chap 15. Narcotic antagonists.....	181
Chap 16. Anti-inflammatory substances.....	185-200

A TEXTBOOK OF

Pharmaceutical Marketing



As Per PCI Regulations
Final Year B.Pharmacy Semester VIII

- ◆ Prof. Sonali Ankush Barke
- ◆ Prof. Sujit Tukaram Tambe
- ◆ Prof. Dhananjay Ashok Landge
- ◆ Prof. Vaishali Chandrashekhar Kulkarni



**BRILLIANT
PUBLICATION**

MRP ₹ 175/-



Dr. Sushil Prasad, Editor

Brilliant Publication

Author: Brilliant Group

© 2019 Brilliant Group. All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Brilliant Publication.

For more information, visit our website at www.brilliantpublication.com

Printed and Bound in India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Printed at Brilliant Publication, Patna, Bihar, India

Best Selling Titles in Pharmacy

2nd Semester B. Pharmacy Text Books	2nd Year Diploma Pharmacy (2019)
1. Pharmaceutical Inorganic Chemistry 139	1. Pharmacology 308
2. Pharmaceutical Analysis 175	2. Community Pharmacy & Management 159
3. Human Anatomy & Physiology 229	3. Biopharmaceutics & Clinical Pharmacology 115
4. Pharmaceutical-I 175	4. Pharmaceutical Jurisprudence 115
5. Communication Skills 108	5. Hospital & Clinical Pharmacy 115
2nd Semester B. Pharmacy Self Study	2nd Year Diploma Pharmacy (2019)
1. Unit in Anatomy & Physiology 7	Self Study
2. Pharmaceutical Organic Chemistry 104	1. Pharmacology 108
3. Biochemistry 108	2. Community Pharmacy & Management 108
4. Pharmacology 115	3. Biopharmaceutics & Clinical Pharmacology 108
5. Computer Applications in Pharmacy 115	4. Pharmaceutical Jurisprudence 108
6. Business Mathematics 115	5. Hospital & Clinical Pharmacy 108
2nd Semester B. Pharmacy Self Study	2nd Year Diploma Pharmacy (2019)
1. Pharmaceutical Organic Chemistry 139	Self Study
2. Physical Pharmaceutics 108	1. Pharmacology 108
3. Pharmaceutical Microbiology 115	2. Community Pharmacy & Management 108
4. Pharmaceutical Engineering 108	3. Biopharmaceutics & Clinical Pharmacology 108
2nd Year Diploma Pharmacy (2019)	Self Study
Text Books	1. Pharmacology 108
1. Pharmacology 208	2. Community Pharmacy & Management 108
2. Human Anatomy & Physiology 229	3. Biopharmaceutics & Clinical Pharmacology 108
3. Social Pharmacy 108	4. Pharmaceutical Jurisprudence 108
4. Pharmaceutical Chemistry 108	2nd Year Diploma Pharmacy (2019)
5. Pharmaceutical 108	Self Study
2nd Year Diploma Pharmacy (2019) Self Study	1. Pharmacology 108
Self Study	2. Community Pharmacy & Management 108
1. Pharmacology 108	3. Biopharmaceutics & Clinical Pharmacology 108
2. Human Anatomy & Physiology 229	4. Pharmaceutical Jurisprudence 108
3. Social Pharmacy 108	5. Hospital & Clinical Pharmacy 108
4. Pharmaceutical Chemistry 108	
5. Pharmaceutical 108	

All Books Are Available On Amazon & Flipkart

Pharmaceutical Biotechnology - Semester VI

Office Address : Purnea, Saran, Bihar, India

Express: Near Khatwa Bus Stand, Patna-800001

Postage Address : Anandipada, D.M. Singh, Patna, Bihar, India

Patna, Bihar, India

Phone: 91-9431467106 / 9431467107 / 9431467108 / 9431467109

9431467110 / 9431467111 / 9431467112 / 9431467113

9431467114 / 9431467115 / 9431467116 / 9431467117

9431467118 / 9431467119 / 9431467120 / 9431467121

9431467122 / 9431467123 / 9431467124 / 9431467125

9431467126 / 9431467127 / 9431467128 / 9431467129

9431467130 / 9431467131 / 9431467132 / 9431467133

9431467134 / 9431467135 / 9431467136 / 9431467137

9431467138 / 9431467139 / 9431467140 / 9431467141

9431467142 / 9431467143 / 9431467144 / 9431467145

9431467146 / 9431467147 / 9431467148 / 9431467149

9431467150 / 9431467151 / 9431467152 / 9431467153

9431467154 / 9431467155 / 9431467156 / 9431467157

9431467158 / 9431467159 / 9431467160 / 9431467161

9431467162 / 9431467163 / 9431467164 / 9431467165

9431467166 / 9431467167 / 9431467168 / 9431467169

9431467170 / 9431467171 / 9431467172 / 9431467173

9431467174 / 9431467175 / 9431467176 / 9431467177

9431467178 / 9431467179 / 9431467180 / 9431467181

9431467182 / 9431467183 / 9431467184 / 9431467185

9431467186 / 9431467187 / 9431467188 / 9431467189

9431467190 / 9431467191 / 9431467192 / 9431467193

9431467194 / 9431467195 / 9431467196 / 9431467197

9431467198 / 9431467199 / 9431467200 / 9431467201

9431467202 / 9431467203 / 9431467204 / 9431467205

9431467206 / 9431467207 / 9431467208 / 9431467209

9431467210 / 9431467211 / 9431467212 / 9431467213

9431467214 / 9431467215 / 9431467216 / 9431467217

9431467218 / 9431467219 / 9431467220 / 9431467221

9431467222 / 9431467223 / 9431467224 / 9431467225

9431467226 / 9431467227 / 9431467228 / 9431467229

9431467230 / 9431467231 / 9431467232 / 9431467233

9431467234 / 9431467235 / 9431467236 / 9431467237

9431467238 / 9431467239 / 9431467240 / 9431467241

9431467242 / 9431467243 / 9431467244 / 9431467245

9431467246 / 9431467247 / 9431467248 / 9431467249

9431467250 / 9431467251 / 9431467252 / 9431467253

As Per PCI Regulations
Third Year B. Pharmacy Semester VI

A TEXTBOOK OF

Pharmaceutical Biotechnology



- Prof.(Dr.) Meghana Raykar
- Prof.(Dr.) Govind Asane
- Prof.(Dr.) Santosh Dengale
- Prof.(Dr.) Praneta Desole



BRILLIANT PUBLICATION

MRP ₹ 200/-



9 789431 467106

Pharmaceutical Biotechnology

HSBPVTS, Kashti



P 3286

As Per PCI Regulations

THIRD YEAR B PHARMACY
(SEMESTER VI)

3286
B

- Pointwise explanation of each topic, Clear presentation, simple language, easy understanding Comprehensive yet accurate: Comprehensive coverage of all relevant information numerous graphics, tables, diagrams and figures wherever needed
- The most up-to-date chapters explore the latest developments in industrial biotechnology.
- Chapters like Environmental biotechnology, Animal cell and tissue biotechnology, Biotechnology of medicinal plants Genetics and molecular biotechnology, Genetic recombination, immobilization of enzymes.

- AUTHORS -

Prof.(Dr) Meghana Raykar

M. Pharm, Ph.D.(Pharma Sciences)

Department of Pharmaceutics

HSBPVT's, Group of Institutions,

Faculty of Pharmacy.At/Post- Kashti,

Tal-Shrigonda, Dist- Ahmednagar,

Maharashtra, India. Pin-414701

Prof.(Dr) Santosh Dengale

M. Pharm, Ph.D.(Pharma Sciences)

Professor & Principal

Dr.Naikwadi College of Pharmacy,

Jamgaon,Sinnar,Nashik-422103

Prof.(Dr) Govind Asane

M. Pharm, Ph.D(Pharma Sciences)

Department of Pharmaceutics

St. John Institute of Pharmacy and Research

Palghar, Maharashtra-401404

Prof.(Dr) Praneta Desale

M. Pharm, Ph.D. (Pharma Sciences)

(Principal)

SSPM College Of Pharmacy, Dhule



**Brilliant
Publication**

Special of Success

Puneet Yash Arcade, 3rd Floor, Opp. Kokan Express,

Near Kothrud Bus Stand, Kothrud, Pune - 411038.

Mob No. - +91 7057488957 / 9156347572 / 8605467166

Declaration

- Pharmaceutical Biotechnology
- First Edition : 25 Dec 2023
- Publisher & Printer :
Brilliant Publication
Puneet Yash Arcade, 3rd Floor,
Opp. Kokan Express,
Near Kothrud Bus Stand,
Kothrud, Pune - 411038.
Mob No. - +91 7057488957 /
9156347572 / 8605467166

- Printing DTP by :
Brilliant Team
- © All Rights are reserved by
publisher

- ISBN No. :



9 789393 304902

Advisory Board

Dr. Vishal Bharat Babar
(M.Pharm, PHD)
Dattakala College of Pharmacy,
Pune

Dr. Ramesh D. Ingole
(M.Pharm PHD)
Pharmacy College, Pathri

Dr. Sanjay K. Bais
(M.Pharm PHD)
Fabtech College of Pharmacy,
Sangola

Prof. Sanjay Desai
(M.Pharm)
Sahyadri Shikshan Sanstha's
College of Pharmacy, Savarde

Prof. Sunil B. Chaudhari
(M.Pharm)
M B Patel Institute of Pharmacy,
Gondia

Prof. Avinash B. Thalkari
(M.Pharm, PHD)
Vasant Pharmacy, Kej

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, there from.

Content



1. An introduction to biotechnology with reference to pharmacology.....	08
2. Biotechnology of enzymes Techniques for immobilizing enzymes and their uses.....	16
3. Biosensors.....	23
4. Protein engineering.....	29
5. Immunization.....	89
6. Immunoblotting technique.....	119
7. Fermentation.....	161

Dr Sanjay Prabhakar Dhor
 Founder Brilliant Publications
Ahead Brilliant Group

Brilliant group was formed in 1994 with vision to deliver unmatched business value to the customers through a combination of process excellence, quality framework and service delivery innovation.

We believe in providing the appropriate and to end relation but leverage technology. We are driven by highly trained staff, operating out of National Network and practicing unique customer centric methodology.

Group has major focus on Information Technology, Insurance, Education and Manufacturing sectors of the economy.

Offices:
North America
 3400 Power 113 rd,
 Duluth GA, 30099
 Phone: (770) 418-6633
 Fax: (770) 418-1470

Australia
 10/100 King Street
 New South Wales 2008,
 Sydney, Australia
 Phone: (0011) 4338333

Bangalore
 No. 215, 4th Block,
 4th Stage, 10th Cross,
 Bangalore-560091
 Phone: 91789-2541797

BRILLIANT PUBLICATION
 Society of Excellence

Brilliant
 Education Society

BRILLIANT EDUCATION SOCIETY



1st Semester B. Pharmacy Text Books

1. Pharmaceutical Inorganic Chemistry	150
2. Pharmaceutical Analysis	175
3. Human Anatomy & Physiology	230
4. Pharmacology - I	175
5. Communication Skills	150

2nd Semester B. Pharmacy Text Books

1. Human Anatomy & Physiology II	230
2. Pharmaceutical Organic Chemistry I	160
3. Biochemistry	230
4. Pathophysiology	230
5. Computer Application in Pharmacy	210
6. Environmental Sciences	155

3rd Semester B. Pharmacy Text Books

1. Pharmaceutical Organic Chemistry II	130
2. Physical Pharmaceutics I	160
3. Pharmaceutical Microbiology	170
4. Pharmaceutical Engineering	250

1st Year Diploma Pharmacy (B.A. 2008) Text Books

1. Pharmaceutics	250
2. Human Anatomy & Physiology	250
3. Social Pharmacy	260
4. Pharmaceutical Chemistry	250
5. Pharmacognosy	280

2nd Year Diploma Pharmacy (B.A. 2008) Lab Manuals

1. Pharmaceutics	215
2. Human Anatomy & Physiology	215
3. Social Pharmacy	190
4. Pharmaceutical Chemistry	180
5. Pharmacognosy	180

Practical Training Manual @ 250

2nd Year Diploma Pharmacy (B.A. 2009) Lab Manual

1. Pharmacology	25
2. Community Pharmacy & Management	25
3. Biochemistry & Clinical Pathology	25
4. Pharmacotherapeutics	25
5. Hospital & Clinical Pharmacy	25

3rd Year Diploma Pharmacy (B.A. 2008) Text Books

1. Pharmacology	30
2. Community Pharmacy & Management	20
3. Biochemistry & Clinical Pathology	20
4. Pharmacy Law & Ethics	20
5. Pharmacotherapeutics	20
6. Hospital & Clinical Pharmacy	20
7. Biochemistry Clinical Pathology	30
8. Pharmacy Law & Ethics	20

1st Year Diploma Pharmacy (B.A. 2008) Assignment & Field Visit Book

1. Pharmaceutics	30
2. Social Pharmacy	30
3. Pharmaceutical Chemistry	30
4. Pharmacognosy	30

2nd Year Diploma Pharmacy (B.A. 2008) Assignment & Field Visit Book

1. Pharmacology	40
2. Community Pharmacy & Management	20
3. Biochemistry & Clinical Pathology	20
4. Pharmacy Law & Ethics	40
5. Hospital & Clinical Pharmacy	20

All Books are Available on Amazon & Flipkart

Ext. External Examination @ 370

Office Address: Patient Nash Arcade, 3rd Floor Opp. Hotel Kolan Express, Near Kothrud Bus Stand, Kothrud, Pune - 411038
Factory Address: Anandprabha, D Wing, Opp. Accurate, Dargat Industrial Estate, Shivajinagar, Pune 411004

Call: brilliantpublications@brilliant.com | **Website:** www.brilliantpublications.com
MO. NO.: 9685467166 / 9695950932 / 9918426662 / 9834852072

Dist. Books Distributors - (1) S. S. Anand Book, Near Nanyang School Durgam Chattri, New Delhi - 110028
 (2) P. P. - 4300070, And - 7600010, Co
 (3) New Delhi Educational & Social Welfare Society - Major Road, Chhatrapati Shivaji Maharaj, New Delhi - 110028
 (4) Sai Ram, Pune - 411005
 (5) Global Education Society - Near Kothrud Bus Stand, Kothrud, Pune - 411038
 (6) Global Education Society - Near Kothrud Bus Stand, Kothrud, Pune - 411038
 (7) Global Education Society - Near Kothrud Bus Stand, Kothrud, Pune - 411038
 (8) Global Education Society - Near Kothrud Bus Stand, Kothrud, Pune - 411038
 (9) Global Education Society - Near Kothrud Bus Stand, Kothrud, Pune - 411038
 (10) Global Education Society - Near Kothrud Bus Stand, Kothrud, Pune - 411038

A TEXTBOOK OF

Cosmetic Science



As Per PCI Regulations
Final Year B. Pharmacy Semester VIII

- ◆ Dr. Vijay Dhondiram Wagh
- ◆ Prof. (Dr.) Meghana Raykar
- ◆ Dr. Vivekanand Ankush Kashid
- ◆ Ms. Rajiya Afzal Khan



BRILLIANT PUBLICATION

MRP ₹ 175/-

INDEX

1. Introduction to cosmetic science.....	1
2. Principles of formulation and building blocks of cosmetic products.....	4
3. Role of herb in cosmetics.....	8
4. Principle of cosmetic evaluation.....	10
5. Cosmetic problem associated with hair,scalp,skin.....	141