



किसान विद्या प्रसारक संस्थेचे

किसान कला, वाणिज्य व विज्ञान महाविद्यालय

Kisan Vidya Prasarak Sanstha's

KISAN ARTS, COMMERCE & SCIENCE COLLEGE

PAROLA - 425 111 (Dist. Jalgaon) M.S.

Office : (02597) 292441 Principal : Phone & Fax (02597) 293688

Website : www.kisanacscollegeparola.co.in

Email : pricipalkc@rediffmail.com

Dr. Y. V. Patil (M.Sc., M.Phil., Ph.D.)
Principal

Outward No. : /202 -202

Date : / /202

Index

Books/Books Chapter and Conference Proceeding 2020-21

Sr. No	Title of paper	Book/Book Chapter/Proceeding	Name of Author	Publisher
54	Principles of Physical Chemistry, CBCS, Semester-V, CH-501 T. Y. B. Sc.	Book Chapter	Dr. G. H. Sonawane	Prashant Publication
55	Practical Chemistry, CBCS, Semester-V, CH-507 T. Y. B. Sc.	Book Chapter	Dr. G. H. Sonawane	Prashant Publication
56	Research Methodology T.Y.B.Sc Semester_VI CH 606 (B)	Book Chapter	Dr. G. H. Sonawane	Prashant Publication
57	Principles of Physical Chemistry, CBCS, Semester-VI, CH-601 T. Y. B. Sc.	Book Chapter	Dr. G. H. Sonawane	Prashant Publication
58	Pest Management, Sem-V, Zoo-506, T.Y. B.Sc.	Book Chapter	Dr. N. H. Desale	Prashant Publications
59	Female Chief Minister of India	Conference Proceeding	Mr. S. B Patil	B. Aadhar
60	Field Techniques and Introduction to Project Report	Book Chapter	Dr Prafull S Thakare	Atharv Publication
61	Geography of disaster risk reduction, GG-355,	Book Chapter	Dr Prafull S Thakare	Atharv Publication
62	Green Chemistry	Book Chapter	A S Patil	Prashant Publication



Dr. Y. V. Patil
Principal

KVPS Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon 425111

2020-21

54

19.



Also Available in
e-Book

**CBCS
PATTERN**

KAVAYITRI BAHINABAI CHAUDHARI
NORTH MAHARASHTRA UNIVERSITY

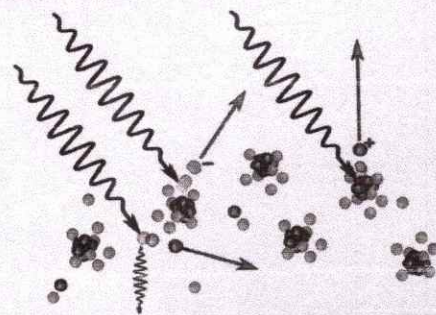
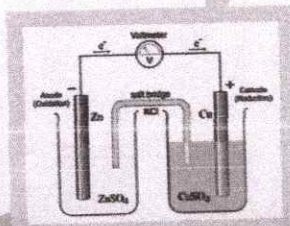
T.Y.B.Sc. • SEM V • CH 501

PRINCIPLES OF PHYSICAL CHEMISTRY

Prof. (Dr.) A. M. Nemade
Dr. V. T. Patil

Dr. H. A. Mahajan
Dr. S. D. Yeole

Dr. G. H. Sonawane



Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon

CHEMISTRY



As per U.G.C. Guidelines and also on the basis of revised syllabus of **Kavayitri Bahinabai Chaudhari North Maharashtra University** with effect from **June, 2020**, Also useful for all Universities.

PRINCIPLES OF PHYSICAL CHEMISTRY

T.Y.B.Sc. (CBCS) | CH-501 | Sem V

- A U T H O R S -

Prof. (Dr) A. M. NEMADE

Professor & Head, Dept. of Chemistry
Dr. A.G.D. Bendale Mahila College, Jalgaon.

DR. H. A. MAHAJAN

Vice Principal,
Smt. G.G. Khadse College, Muktainagar.

Dr. G. H. SONAWANE

Head & Vice Principal,
Kisan Arts Commerce and
Science College, Parola.

DR. V. T. PATIL

Head, Dept. of Chemistry
Z.B. Patil College, Dhule.

Dr. S. D. YEOLE

Head, Dept. of Chemistry,
Bhusawal Arts, Science, P. O. Nahata Commerce, College, Bhusawal.

SPECIMEN COPY



**Prashant
Publications**

[Handwritten signature]

Principal

Kisan Vidya Prasarak Samstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon.



PI



**Prashant
Publications**

© Reserved

PRINCIPLES OF PHYSICAL CHEMISTRY

T.Y.B.Sc. (CBCS) | CH-501 | Sem V

Publisher and Printer

Prashant Publications

3, Pratap Nagar, Shri Sant Dnyaneshwar Mandir Road,
Near Nutan Maratha College, Jalgaon 425001.

• Phone • Website • E-mail

(0257) 2235520, 2232800

www.prashantpublications.com

prashantpublication.jal@gmail.com

• First Edition • ISBN • Type Setting

August, 2020

978-93-89501-82-7

Prashant Publication

Price : ₹ 85/-

e-Books are available online at www.prashantpublications.com

Prashant Publications app for e-Books

kopykitab.com • amazon.com • play.google.com

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 (xerox copy), recording or otherwise, without the prior permission.

Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon



20



Also Available in
e-Book

**CBCS
PATTERN**

KAVAYITRI BAHINABAI CHAUDHARI
NORTH MAHARASHTRA UNIVERSITY

T.Y.B.Sc. • SEM V • CH 507, 508, 509

PRACTICAL CHEMISTRY

PHYSICAL, INORGANIC, ORGANIC

Dr. H. A. Mahajan

Prof. A. M. Nemade

Dr. A. N. Sonar

Dr. V. T. Patil

M. S. Patil

Dr. J. U. Patil

Dr. G. H. Sonawane

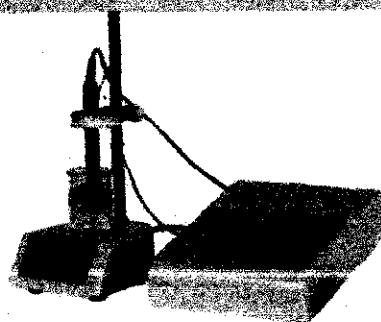
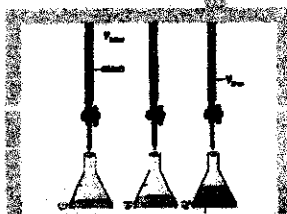
Dr. V. B. Jadhav

M. T. Chaudhari

Dr. G. R. Chaudhari

Dr. M. K. Patel

Dr. R. P. Phalak



CHEMISTRY

As per U.G.C. Guidelines and also on the basis of revised syllabus of **Kavayitri Bahinabai Chaudhari North Maharashtra University** with effect from June, 2020. Also useful for all Universities.

PRACTICAL CHEMISTRY

PHYSICAL, INORGANIC, ORGANIC

T.Y.B.Sc. (CBCS) | CH-507, 508, 509 | Sem V

- A U T H O R S -

Dr. H. A. MAHAJAN

Smt. G.G. Khadse College,
Muktainagar.

M. S. PATIL

G.D.M. Arts, K.R.N. Commerce, and
M.D. Science College, Jamner

M. T. CHAUDHARI

GDM Arts, KRN Commerce and
MD Science College, Jamner

Prof. (Dr) A. M. NEMADE

Dr. A.G.D. Bendale Mahila
Mahavidyalay, Jalgaon.

DR. J. U. PATIL

N. S. S. Arts and Science College,
Dahivel, Tal. Sakri

Dr. G. R. CHAUDHARI

Arts, Commerce and
Science College, Bhalod

Dr. V. T. PATIL

JET's Zulal Bhilajirao Patil
College, Dhule.

Dr. G. H. SONAWANE

Kisan Arts Commerce and
Science College, Parola.

Dr. M. K. PATEL

P.S.G.V.P. Mandal's Arts, Commerce
and Science College, Shahada

Dr. A. N. SONAR

V S Naik College, Raver
Jalgaon.

Dr. V. B. JADHAV

JET's Zulal Bhilajirao Patil
College, Dhule

Dr. R. P. PHALAK

Principal, D D N Bhole College,
Bhusawal.

*With Best Compliments
from,
Authors and Publishers*



**Prashant
Publications**

Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon





**Prashant
Publications**

© Reserve

PRACTICAL CHEMISTRY

TY.B.Sc. (CBCS) | CH-507, 508, 509 | Sem V

Publisher and Printer

Prashant Publications

3, Pratap Nagar, Shri Sant Dnyaneshwar Mandir Road,
Near Nutan Maratha College, Jalgaon 425001.

• Phone • Website • E-mail

(0257) 2235520, 2232800

www.prashantpublications.com

prashantpublication.jal@gmail.com

• First Edition • ISBN • Type Setting

August, 2020

978-93-89501-89-6

Prashant Publication

Price : ₹ 110/-

e-Books are available online at www.prashantpublications.com



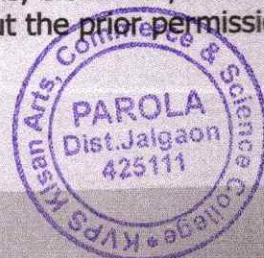
Prashant Publications app for e-Books

kopykitab.com • amazon.com • play.google.com

All rights reserved. No part of this publication may be reproduced, stored in retrieval system or transmitted, in any form or by any means, electronic, mechanical photocopying (xerox copy), recording or otherwise, without the prior permission.

Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon



2020-21 - 3
56
21.

CBCS
PATTERN



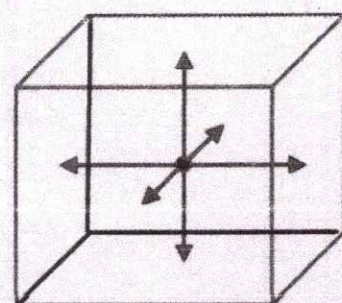
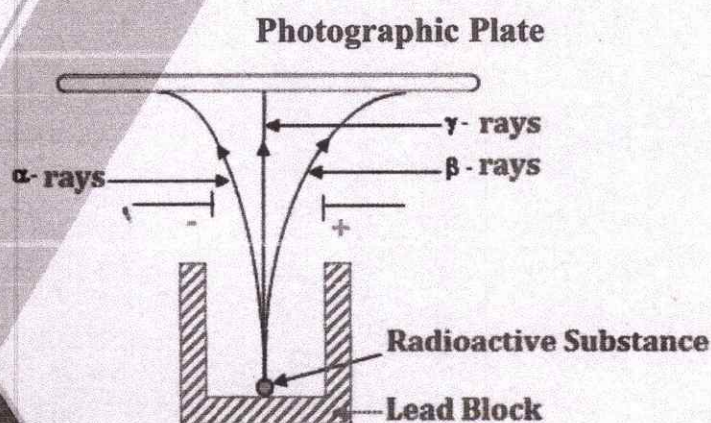
Also Available in
e-Book

Kavayitri Bahinabai Chaudhari North Maharashtra University

T.Y.B.Sc. ■ SEM VI ■ CH 601

PRINCIPLES OF PHYSICAL CHEMISTRY

Prof. (Dr.) A. M. Nemade | Dr. H. A. Mahajan
Dr. G. H. Sonawane | Dr. V. T. Patil | Dr. S. D. Yeole



Centre of Symmetry



Principal
Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon

CHEMISTRY



As per U.G.C. Guidelines and also on the basis of revised syllabus of **Kavayitri Bahinabai Chaudhari North Maharashtra University** with effect from June, 2020, Also useful for all Universities.

PRINCIPLES OF PHYSICAL CHEMISTRY

T.Y.B.Sc. (CBCS) | CH-601 | Sem VI

- A U T H O R S -

Prof. (Dr) A. M. NEMADE

Professor & Head, Dept. of Chemistry
Dr. A.G.D. Bendale Mahila College, Jalgaon.

DR. H. A. MAHAJAN

Vice Principal,
Smt. G.G. Khadse College, Muktainagar.

Dr. G. H. SONAWANE

Head & Vice Principal,
Kisan Arts Commerce and
Science College, Parola.

DR. V. T. PATIL

Head, Dept. of Chemistry
Z.B. Patil College, Dhule.

Dr. S. D. YEOLE

Head, Dept. of Chemistry,
Bhusawal Arts, Science, P. O. Nahata Commerce, College, Bhusawal.

SPECIMEN COPY



**Prashant
Publications**

Principal

Kisan Vidya Prashant Santha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon



IS



**Prashant
Publications**

© Reserved

PRINCIPLES OF PHYSICAL CHEMISTRY

T.Y.B.Sc. (CBCS) | CH-601 | Sem VI

Publisher and Printer

Prashant Publications

3, Pratap Nagar, Shri Sant Dnyaneshwar Mandir Road,
Near Nutan Maratha College, Jalgaon 425001.

. Phone . Website . E-mail

(0257) 2235520, 2232800

www.prashantpublications.com

prashantpublication.jal@gmail.com

. First Edition . ISBN . Type Setting

February, 2021

978-93-90483-40-2

Prashant Publication

Price : ₹ 95/-

e-Books are available online at www.prashantpublications.com



Prashant Publications app for e-Books

kopykitab.com • amazon.com • play.google.com

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 (xerox copy), recording or otherwise, without the prior permission.

Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon



2020-21 - 58

22.

CBCS
PATTERN



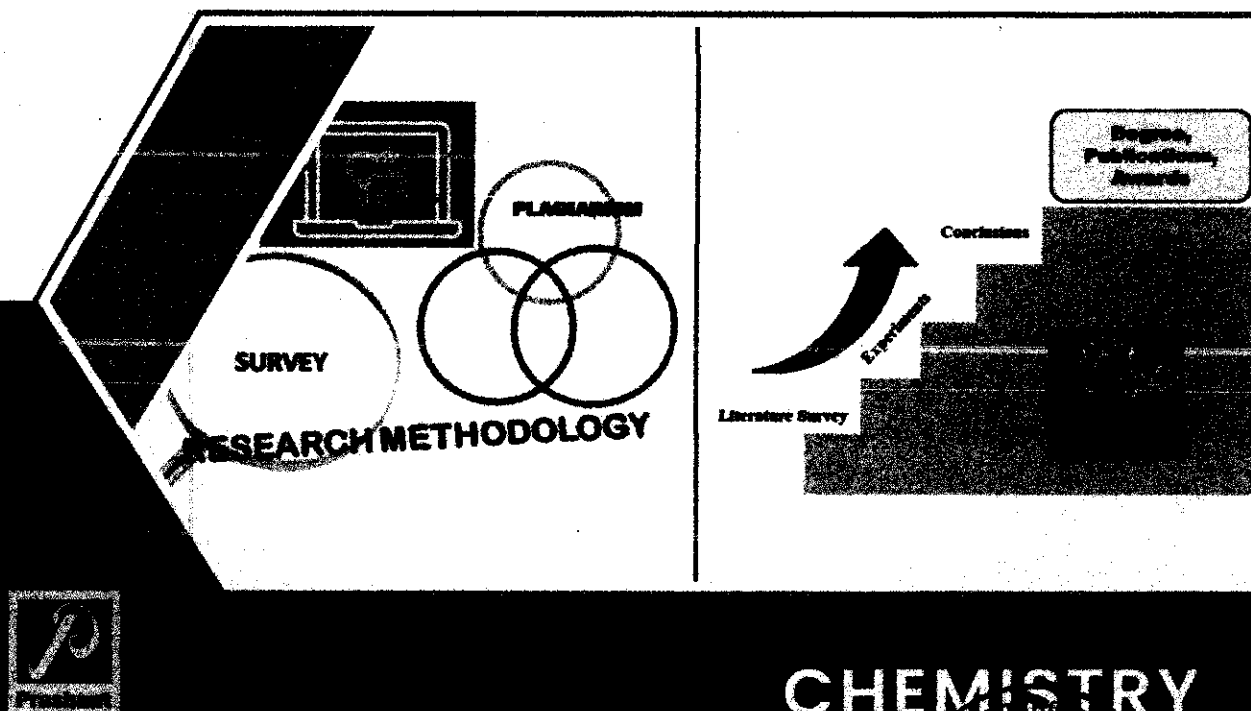
Also Available in
e-Book

Kavayitri Bahinabai Chaudhari North Maharashtra University

T.Y.B.Sc. ■ SEM VI ■ CH 606 (B)

RESEARCH METHODOLOGY

Dr. G. H. Sonawane | Dr. H. A. Mahajan | Dr. H. R. Talele
Prof. (Dr.) S. S. Rajput | Dr. S. D. Yeole | Dr. S. L. Sonawane



CHEMISTRY

As per U.G.C. Guidelines and also on the basis of revised syllabus of **Kavayitri Bahinabai Chaudhari North Maharashtra University** with effect from June, 2020, Also useful for all Universities.

RESEARCH METHODOLOGY

T.Y.B.Sc. (CBCS) | CH-606 (B) | Sem VI

- A U T H O R S -

Dr. G. H. SONAWANE

Head & Vice Principal,
Kisan Arts Commerce and
Science College, Parola.

DR. H. A. MAHAJAN

Vice Principal,
Smt. G. G. Khadse College,
Muktainagar.

DR. H. R. TALELE

Dept. of Chemistry,
Dhanaji Nana Mahavidyalaya, Faizpur.

Prof. (Dr.) S. S. RAJPUT

Swoddharak Vidyarthi Sanstha's Dadasaheb
Rawal Arts and Science College, Dondaecha.

Dr. S. D. YEOLE

Head, Dept. of Chemistry,
Bhusawal Arts, Science, and
P. O. Nahata Commerce, College, Bhusawal.

DR. S. L. SONAWANE

Dept. of Chemistry,
Jai Hind Education Trust Sanchalit
Z. B. Patil College, Deopur, Dhule.

SPECIMEN COPY



**Prashant
Publications**

[Signature]
Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon



SS



**Prashant
Publications**

© Reserved

RESEARCH METHODOLOGY

T.Y.B.Sc. (CBCS) | CH-808 (BI) | Sem VI

Publisher and Printer

Prashant Publications

3, Pratap Nagar, Shri Sant Dnyaneshwar Mandir Road,
Near Nutan Maratha College, Jalgaon 425001.

Phone • Website • E-mail

(0257) 2235520, 2232800

www.prashantpublications.com

prashantpublication.jal@gmail.com

• First Edition • ISBN • Type Setting

February, 2021

978-93-90483-88-4

Prashant Publication

Price : ₹ 75/-

e-Books are available online at www.prashantpublications.com

Prashant Publications app for e-Books

kopykitab.com • amazon.com • play.google.com

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 (xerox copy), recording or otherwise, without the prior permission.

Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon



04-20-24

2019-20- (SB)

**CBCS
PATTERN**



Also Available in
e-Book

**KAVAYITRI BAHINABAI CHAUDHARI
NORTH MAHARASHTRA UNIVERSITY**

T.Y.B.Sc. • SEM V • ZOO 506 (A)

PEST MANAGEMENT

Dr. N. H. Desale

Dr. D. V. Ahirrao

Dr. L. B. Pawar

Dr. Namrata G. Mahajan

Dr. Manojkumar Z. Chopda



/DES

SR / 30006

Principal

Kisan Vidya Prasarak Samstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon



ZOOLOGY

As per U.G.C. Guidelines and also on the basis of revised syllabus of **Kavayitri Bahinabai Chaudhari North Maharashtra University** with effect from June, 2020, Also useful for all Universities.

PEST MANAGEMENT

T.Y.B.Sc. (CBCS) | ZOO - 506 (A) | Sem V

30006



- AUTHORS -

DR. N. H. DESALE

Associate Professor,
Head, Department of Zoology,
Kisan Arts, Commerce and Science College, Parola.

DR. D. V. AHIRRAO

Associate Professor,
Department of Zoology,
SSVPs, Dr.P.R.Ghogare Science College,
Dhule

DR. L. B. PAWAR

Associate Professor,
Head, Department of Zoology,
V. V. M's S. G. Patil Arts, Science and
Commerce College, Sakri.

DR. MRS. NAMRATA G. MAHAJAN

Assistant Professor,
Department of Zoology,
Moolji Jaitha College (Autonomous),
Jalgaon

DR. MANOJKUMAR Z. CHOPDA

Assistant Professor,
Department of Zoology,
Moolji Jaitha College (Autonomous),
Jalgaon

ACC.No. = 30006

CALL No. =

PRICE = 751/-

DATE = 11-10-2021



**Prashant
Publications**

Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon





**Prashant
Publications**

© Reserved

PEST MANAGEMENT

T.Y.B.Sc. (CBCS) | ZOO-506 (A) | Sem V

*DES
30006*

Publisher and Printer

Prashant Publications

3, Pratap Nagar, Shri Sant Dnyaneshwar Mandir Road,
Near Nutan Maratha College, Jalgaon 425001.

• Phone • Website • E-mail

(0257) 2235520, 2232800

www.prashantpublications.com

prashantpublication.jal@gmail.com

• First Edition • ISBN • Type Setting

October, 2020

978-93-90483-13-6

Prashant Publication

Price : ₹ 75/-

e-Books are available online at www.prashantpublications.com

Prashant Publications app for e-Books

kopykitab.com • amazon.com • play.google.com

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 (xerox copy), recording or otherwise, without the prior permission.

Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon



Impact Factor-7.675 (SJIF)

ISSN-2278-9308

B.Aadhar

Peer-Reviewed Indexed

Multidisciplinary International Research Journal

November - 2020

SPECIAL ISSUE-CCLX (260)

INDIAN WOMEN : PRESENT, PAST AND FUTURE



Chief Editor

Prof. Virag S. Gawande

Director

Aadhar Social

Research & Development

Training Institute Amravati

Editor

Dr.S.N.Jadhavar

**Head, Deptt. of History,
Sham Gadale Art's College,**

Dahiphal (Wadmauli)

Tq.KAJJ.,Dist. BEED.



This Journal is indexed in :

- Scientific Journal Impact Factor (SJIF)
- Cosmos Impact Factor (CIF)

International Impact Factor Services (IIFS)

For Details Visit To : www.aadharsocial.com

Aadhar PUBLICATIONS



	Mr.Vithal Baburao Gunde	
20	Feminist literature Sumitra Sangwa	78
21	Feminist Concerns in Shashi Deshpande's Roots and Shadows Dr. Sandeep G. Ladkar	83
22	Women in ramayana – the lanka group Dr. Vasudha. N	86
23	Saint Eknath's 'Gondhal' : Yoking Feminism to Spirituality Dr. U. D. Padamwar	90
24	Women Empowerment _A Need of Time Dr.Urmila Kshirsagar	92
25	The Economic Expansion of Pisciculture in Rural Areas: Its Status, Issues and Challenges K.R.Padma1, K.R.Don2	95
26	Status of Women in the Vedic Age: A Case Study Joygopal Singha	101
27	Female Chief Minister In India Shashikant Bhalchandra Patil	103
28	Feminism and Indian Theatre: An Analysis Dr.Chandrashekhar Bapurao Kanase	109
29	A Study On Women In Bohra Community For Determining Relationship Between Bmi And Obesity Mrs.Deepali Sawant, / Dr.Nilesh A. Lohar	115
30	An analysis of gender equality and women empowerment in india Budde Santhosha Kumar / Dr. Shilpa Bhimrao Gaonkar	119
31	Feminist literature and Human dignity Avishkar Kamble	123
32	Gender inequality and women's participation in politics Shinde V. M.	125
33	Women and political representation in india: a gandhian view towards more equitable political order Soumalya Ghosh	132
34	Journey Of Women Entrepreneurs In Economic Development Dr Mamata Jagannathji Rathi	136
35	Laws and its implications about Women Dr. Manesh Ramdas Khandagale	148
36	Women as reflected in the inscriptions of the Chalukyas, Rashtrakutas, later Chalukyas, Shilaharas and Yadavas Dr. Manjiri Bhalerao	152
37	Dnyanjyoti Savitribai Phule As An Educator: A Review Mr.Manohar Ramulu Kondagurle	157
38	Women and the world of work at global level : A Study Mr. P BalaMuralidhar	161
39	Government Targets and Strategies for Rural Population Development in India : A Literature Review Dr. Khade Sominath Sarangdhar	167
40	An analysis of issues and challenges of women empowerment in Karnataka Kiran Sudi / Dr. Siddhagangamma	17

Principal

Kisan Vidya Prasarak Sanstha's

San Arts, Commerce & Science
College, Parola Dist. Jalgaon



Female Chief Minister In India

Shashikant Bhalchandra Patil.

Asst. Professor Dept. of Political Science, Kisan ACS College Parola.
Contact: 8805887515 Mail : shashipatil8580@gmail.com

Preparation:

The Politics is one of the major and most important fields in all over the World. This field impacts on various fields. We can also say that the various decisions in various field like social, economical, agriculture, tread, defense, health, education, science and technology, export and import all these are depends on the decision making policy of Politics. Even each and every News paper, News channel and Social media give the first preference to the political issues in day today life. In the past and historical period woman was neglected by male dominant society. We know as well as read that Citizenship was not allotted to woman in the political theory of the great political thinker like Plato or Aristotle. But, Democratic values like liberty, equality, fraternity, unity, secular, socialism, republic, gender equality, education to all, peace and security, nation and neighbor friendship, help and cooperate in disaster condition has the great importance in Wale fare states. Various countries in all over the World has given the preference to Democratic Governance and Wale fare states. Wale fare states point of views, Democratic Governance gives the value to gender equality to growing the participation of women in every field specially political participation. Whether women are young or old, rich or poor, literate or illiterate, live in rural or urban area, which language speak, Wale fare state does not partiality or discriminate. It gives equal chances to each and every woman for her development as well as empowerment. In past period, women has no freedom. Throughout history, the central role of women in society has ensured the stability, progress and long-term development of nations. Women are the primary caretakers of children and elders in every country of the World. Basic education is key to a nation's ability to develop and achieve sustainability targets. The very Research Paper has focus on which and how many Women has become Chief Ministers in India. Its also descript that various figures and information about women politics in India.

Objectives :

- 1) To study the concept of Chief Minister.
- 2) To review the Women Chief Ministers in various states in India.
- 3) To study the Party wise Women Chief Ministers in India.
- 4) To review the State wise Women Chief Ministers in India.
- 5) To study the age, period and days wise Women Chief Ministers in India.
- 6) To review the remarkable work by Women Chief Ministers in India.

Hypothesis:

- 1) Very few women get leading position in Indian political system.
- 2) Male dominant society impacts on women political participation.
- 3) Reservation Policy helps to grow the women political participation.
- 4) Few States seem to give the chance of Chief Ministers to woman.
- 5) Women seem to do most notable work while serving as CM.

When India got freedom, there were very little-bittle political participation of women. But from the very decade of 80s, women political participation were risen day-by-day. The very 74th Amendments open the door for women in political field. In Local Self Governments, women political participation has defiantly risen near about 50%. But it seem very weak and tragic situation in States Assembly and Parliament of country. The Bill about 33% Reservation for Ladies in the Parliament and Legislative Assembly has been pending still. In various States, Political Parties have



UGC च्या मार्गदर्शक तत्वानुसार, क.ब.ची. उत्तर महाराष्ट्र विद्यापीठ, जळगाव व
इतर विद्यापीठांच्या नवीन अभ्यासक्रमावर आधारित तसेच
M.P.S.C., नेट-सेट व इतर स्पर्धा परीक्षांसाठी उपयुक्त असे अद्ययावत पुस्तक.

महत्वाच्या संकल्पना / वस्तुनिष्ठ स्वरूपातील मुद्यांमधीत

क्षेत्र तंत्रे आणि प्रकल्प अहवालाची ओळख

[Field Techniques and Introduction to Project Report]

डॉ. शैलेश वाघ

पदव्युत्तर व संशोधन, भूगोलशास्त्र विभाग,
महात्मा गांधी शिक्षण मंडळाचे
कला, शास्त्र व वाणिज्य महाविद्यालय,
चोपडा, जि.जळगाव.

डॉ. सिद्धार्थ सोनवणे

भूगोलशास्त्र विभाग,
श्रीमती एन. एन. सी. कला, वाणिज्य व
विज्ञान महाविद्यालय, कुसुंबा,
ता.जि.धुळे.

प्रा. मुकेश पाटील

पदव्युत्तर व संशोधन, भूगोलशास्त्र विभाग,
महात्मा गांधी शिक्षण मंडळाचे
कला, शास्त्र व वाणिज्य महाविद्यालय,
चोपडा, जि.जळगाव.

डॉ. प्रफुल्ल ठाकरे

भूगोलशास्त्र विभाग,
किसान शिक्षण प्रसारक मंडळाचे
कला, वाणिज्य व विज्ञान महाविद्यालय,
पारोळा, जि.जळगाव.

प्रा. सुभाष खैरनार

पदव्युत्तर व संशोधन, भूगोलशास्त्र विभाग,
प्रताप महाविद्यालय,
अमळनेर, जि.जळगाव.

Specimen Copy
For Recommendations



अथर्व पब्लिकेशन्स

(Signature)

Principal

Kisan Vidya Prasarak Sanstha's
College, Parola, Dist. Jalgaon



UGC च्या मार्गदर्शक तत्त्वानुसार, क.ब.ची. उत्तर महाराष्ट्र विद्यापीठ, जळगाव व
इतर विद्यापीठांच्या नवीन अभ्यासक्रमावर आधारित तसेच
M.P.S.C., नेट-सेट व इतर स्पर्धा परीक्षांसाठी उपयुक्त असे अद्ययावत पुस्तक.

महत्त्वाच्या संकल्पना / वस्तुनिष्ठ स्वरूपातील मुद्यांमधीत

क्षेत्र तंत्रे आणि प्रकल्प अहवालाची ओळख

[Field Techniques and Introduction to Project Report]

डॉ. शैलेश वाघ पदव्युत्तर व संशोधन, भूगोलशास्त्र विभाग,
महात्मा गांधी शिक्षण मंडळाचे
कला, शास्त्र व वाणिज्य महाविद्यालय,
चोपडा, जि.जळगाव.

डॉ. सिद्धार्थ सोनवणे पदव्युत्तर व संशोधन, भूगोलशास्त्र विभाग,
श्रीमती एन. एन. सी. कला, वाणिज्य व
विज्ञान महाविद्यालय, कुसुंबा,
ता.जि.धुळे.

प्रा. मुकेश पाटील पदव्युत्तर व संशोधन, भूगोलशास्त्र विभाग,
महात्मा गांधी शिक्षण मंडळाचे
कला, शास्त्र व वाणिज्य महाविद्यालय,
चोपडा, जि.जळगाव.

डॉ. प्रफुल्ल ठाकरे पदव्युत्तर व संशोधन, भूगोलशास्त्र विभाग,
किसान शिक्षण प्रसारक मंडळाचे
कला, वाणिज्य व विज्ञान महाविद्यालय,
पारोळा, जि.जळगाव.

प्रा. सुभाष खैरनार पदव्युत्तर व संशोधन, भूगोलशास्त्र विभाग,
प्रताप महाविद्यालय,
अमळनेर, जि.जळगाव.

Principal
Kisan Vidya Prasarak Sanstha's
San Arts, Commerce & Science
College, Parola Dist. Jalgaon



Specimen Copy
For Recommendations



2020-21

(7)

UGC च्या मार्गदर्शक तत्त्वानुसार, क.ब.चौ. उत्तर महाराष्ट्र विद्यापीठ, जळगाव व
इतर विद्यापीठांच्या नवीन अभ्यासक्रमावर आधारित तसेच
M.P.S.C., नेट-सेट व इतर स्पर्धा परीक्षांसाठी उपयुक्त असे अद्यावत पुस्तक.

61

महत्त्वाच्या संकल्पना / वस्तुनिष्ठ स्वरूपातील मुद्यांसहीत

आपत्ती जोखीमांचे भूगोलशास्त्र

[GG 355 : Geography of Diasaster Risk Reduction]

डॉ. शैलेश वाघ

पदव्युत्तर व संशोधन, भूगोलशास्त्र विभाग,
महात्मा गांधी शिक्षण मंडळाचे
कला, शास्त्र व वाणिज्य महाविद्यालय,
चोपडा, जि.जळगाव.

डॉ. सिद्धार्थ सोनवणे

भूगोलशास्त्र विभाग,
श्रीमती एन. एन. सी. कला, वाणिज्य व
विज्ञान महाविद्यालय, कुसुंबा,
ता.जि.धुळे.

प्रा. मुकेश पाटील

पदव्युत्तर व संशोधन, भूगोलशास्त्र विभाग,
महात्मा गांधी शिक्षण मंडळाचे
कला, शास्त्र व वाणिज्य महाविद्यालय,
चोपडा, जि.जळगाव.

डॉ. प्रफुल्ल ठाकरे

भूगोलशास्त्र विभाग,
किसान शिक्षण प्रसारक मंडळाचे
कला, वाणिज्य व विज्ञान महाविद्यालय,
पारोळा, जि.जळगाव.

प्रा. सुभाष खैरनार

पदव्युत्तर व संशोधन,
भूगोलशास्त्र विभाग,
प्रताप महाविद्यालय,
अमळनेर, जि.जळगाव.

डॉ. प्रशांत तोरवणे

भूगोलशास्त्र विभाग
पूज्य साने गुरुजी विद्या प्रसारक मंडळाचे
कला, शास्त्र व वाणिज्य महाविद्यालय,
शहादा



अथर्व पब्लिकेशन्स

Specimen Copy
For Recommendations

[Signature]

Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon



2020-21

7/12



Also Available in
e-Book

**CBCS
PATTERN**

KAVAYITRI BAHINABAI CHAUDHARI
NORTH MAHARASHTRA UNIVERSITY

T.Y.B.Sc. • SEM V • CH 506 (B)

GREEN CHEMISTRY

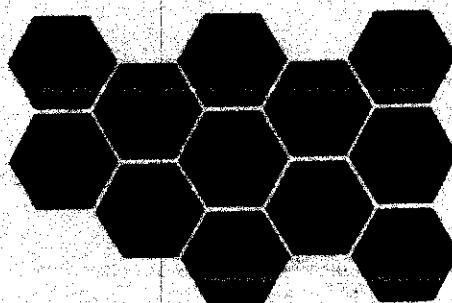
Dr. P. K. Labhane

Dr. S. P. Patil

Dr. P. S. Shisode

Dr. R. S. Balaskar

A. S. Patil



/LAB
SR/2003

Kisan Vidya Mahavidyalaya
Kisan Arts, Commerce
College, Parola

CHEMISTRY



Publications

© Reserved

GREEN CHEMISTRY

T.Y.B.Sc. (CBCS) | CH-506 (B) | Sem V

Publisher and Printer

Prashant Publications

3, Pratap Nagar, Shri Sant Dnyaneshwar Mandir Road,
Near Nutan Maratha College, Jalgaon 425001.

*LAB
29035*

• Phone • Website • E-mail

(0257) 2235520, 2232800

www.prashantpublications.com

prashantpublication.jal@gmail.com

• First Edition • ISBN • Type Setting

August, 2020

978-93-89501-88-9

Prashant Publication

Price : ₹ 85/-

e-Books are available online at www.prashantpublications.com



Prashant Publications app for e-Books

kopykitab.com • amazon.com • play.google.com

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 (xerox copy),

As per U.G.C. Guidelines and also on the basis of revised syllabus of **Kavayitri Bahinabai Chaudhari North Maharashtra University** with effect from June, 2020, Also useful for all Universities.

GREEN CHEMISTRY

T.Y.B.Sc. (CBCS) | CH-506 (B) | Sem V



- A U T H O R S -

Dr. P. K. LABHANE
MGSM's Arts, Science and
Commerce College, Chopda

Dr. S. P. PATIL
G. T. Patil College,
Nandurbar

Dr. Mrs. P. S. SHISODE
S.S.V.P.s. L.K. Dr. P. R. Ghogrey
Science College, Dhule

Dr. R. S. BALASKAR
K.E.S., Pratap College,
Amalner.

A. S. PATIL
KVP Sanstha's Kisan Arts Commerce and
Science College, Parola.

Acc.No. 29033

ALL No.

PRICE 85/-

Dt 17/12/20



**Prashant
Publications**

Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon



Contents

■ Unit 1.....	07
Introduction to Green Chemistry	
■ Unit 2.....	13
Principles of Green Chemistry & Designing a Chemical Synthesis	
■ Unit 3	28
Techniques in Green Chemistry	
■ Unit 4.....	47
Solvents, Reagents and Catalysts in Green Chemistry	
■ Unit 5.....	64
Future Trends in Green Chemistry	

29033



Principal

Kisan Vidya Prasarak Sanstha's
Kisan Arts, Commerce & Science
College, Parola Dist. Jalgaon

