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जनता कालेज, बकेवर (इटावा) २०६१२४
Janta College, Bakewar (Etawah)
(छत्रपति शाहू जी महाराज विश्वविद्यालय, कानपुर से सम्बद्ध)
(Affiliated to C.S.J.M. University, Kanpur)
दिनांक

पत्रांक

Ref No/2023-24

Date.....

3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year

Sl. No.	Name of the teacher	Title of the book/chapters published	Calendar Year of publication
1	Dr. A. K. Pandey	Modern Vegetables Production	2018-19
2	Mr. Ram Das Verma	A Study on the Usage Patterns of Journals used by Students of Engineering Colleges in Sindhudrug and Ratnagiri Districts	2018-19

Principal
Janta College
Bakewar (Etawah)

Rajesh Kishor Tripathi
Rajesh Kishor Tripathi
PRINCIPAL
Janta College, Bakewar

2012 - 2013-13

आधुनिक शाक उत्पादन

MODERN VEGETABLE PRODUCTION

राजेन्द्र कुमार शुक्ल
प्रवीण कुमार शुक्ल
अशोक कुमार पाण्डेय



Rajesh Tripathi
Dr. Rajesh Kishor Tripathi
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Govt. College, Bakhawa

KALYANI

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न. 24 व 25 पहली मंजिल, हमीद शाह कॉम्प्लैक्स

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College, Bakewell

लेखक परिचय

डॉ. राजेन्द्र कुमार शुक्ल (जन्म 1940, बकौवर इटावा)

रीडर अण्ड हेड, उद्यान विज्ञान, जनता कालेज, बकौवर, इटावा उ.प्र.

एम. ए.	1961 आगरा विश्वविद्यालय, आगरा
पी. एच. डी.	1968 आगरा विश्वविद्यालय, आगरा
अनुभव-	वर्ष 1961 से 2000 तक स्नातक व परास्नातक कक्षाओं में अध्यापन, 8 पी.एच.डी. छात्रों का निर्देशन
प्रकाशन-	चार पुस्तकें एवं 158 शोध पत्र एवं तकनीकी लेख।

डॉ. प्रवीन कुमार शुक्ल (जन्म 1962 बकौवर, इटावा - 16 अगस्त 2012)

रीडर अण्ड हेड, उद्यान विज्ञान, जनता कालेज, बकौवर, इटावा उ.प्र.

एम. एस.सी. (कृषि)	1985 च.शे.आ. कृषि एवं प्रौ. विश्वविद्यालय, कानपुर
पी-एच. डी.	1993 च.शे.आ. कृषि एवं प्रौ. विश्वविद्यालय, कानपुर
विशेष बी.एस.सी. (कृषि)	में सर्वाधिक अंकों हेतु महामहिम राज्यपाल प्रदत्त स्वर्ण पदक
अनुभव-	वर्ष 1988 से परास्नातक कक्षाओं में अध्यापन।
प्रकाशन-	दो पुस्तकें एवं 45 शोध पत्र एवं तकनीकी लेख।

डॉ. अशोक कुमार पाण्डेय (जन्म 1966 पाण्डेयपुर राधे, गाजीपुर)

एसोसियेट प्रोफेसर, रीडर अण्ड हेड, उद्यान विज्ञान, जनता कालेज, बकौवर, इटावा उ.प्र.

एम. एस.सी. (कृषि)	1990 च.शे.आ. कृषि एवं प्रौ. विश्वविद्यालय, कानपुर
पी-एच. डी.	1996 नरेन्द्र देव कृषि एवं प्रौ. विश्वविद्यालय, फैजाबाद
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अनुभव-	वर्ष 1999 से परास्नातक कक्षाओं में अध्यापन, 02 पी.एच.डी. छात्रों का निर्देशन,
प्रकाशन-	पांच पुस्तकें एवं 50 शोध पत्र एवं तकनीकी लेख।

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Shri. Kashim S. Patil is well known author in Library and Information Science Discipline.

He is working as Librarian in Anandibai Rautwade Arts, Commerce and Science College, Tal. Vadhivavadi, Dist. Sindhudurg. He has been working as Librarian since last nine years of service and having good knowledge in library science discipline especially in library software for library automation.

He has published eight articles in the international level conferences and seminars over all in India and sixteen articles in the national level conferences and seminars over all in India. The education and qualification of author is M.A., M. Lib. I. Sc., M. Phil., MBA (HR), NET, SET and currently pursuing Ph.D.

Author has submitted Minor Research Project in Library and Information Science Discipline in the year 2012 - 2013 in Mumbai University.

Author had been affiliated to University Grant Commission's INE LIBNET SOUL Project as delegated post of Asst. Technical Officer for SOUL library software installation and provide training to library staff in the Maharashtra and Goa states.

Author has pure knowledge of library automation due to 105 SOUL softwares have been installed and given training to handling and operating SOUL library software to staff as SOUL experts.



Prof. Ramdas Verma is well known author in the discipline of Library and Information Science. He is most senior faculty member of Library Science in Janata College, Bakewar, Etawah, Uttar Pradesh. He is on position of Assistant Prof. & HOD of Library Department in Janata College, Bakewar Etawah, U.P. The author born on 07/07/1964 at Akodi, (Ahoi) Taluk Jannpad, Uttar Pradesh.

The Author's education is B.Sc. (Agric), M.A. (Edu.), M. Lib. I.Sc. The Author have 25 papers in discipline in Library & Information Science Discipline. He has published 10 research papers in International & National Conferences. He is a well known knowledgeable professor in Library & Information Science.



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Study on the Usage Patterns of Journals used by Students of Engineering Colleges in Sindhudurg and Ratnagiri Districts.

Book

Shri. K. S. Patil

Prof. Ramdas Verma



Aruna Prakashan

प्रोफार्म
जनता काले
बक़ेवर (इ)

3

A Study on the Usage Patterns of
E-Journals used by Students of Engineering
Colleges in Sindhudurg and Ratnagiri Districts.
Author - Shri. Kishor Manikrao Waghmare
Prof. Ram das Verma

ISBN 978-81-941315-1-9

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Sl. No.	Name of the teacher	Title of the book/chapters published	Calendar Year of publication
1	Dr. A. K. Pandey	Production Technology of Vegetables and Spices	2019-20

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J. Rakesh Kishor Tnpathi
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Janta College, Bakewar

शाकों व मसालों की उत्पादन तकनीक

Production Technology of
Vegetables and Spices

राजेन्द्र कुमार शुक्ल
अशोक कुमार पाण्डेय
विवेक कुमार त्रिपाठी



प्राचार्य
जनता काले
बकेवर (इटावा)

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Sl. No.	Name of the teacher	Title of the book/chapters published	Calendar Year of publication
1	Dr. Yogesh Shukla	Marketing Research	2020-21
2	Dr. Yogesh Shukla	Marketing Management	2020-21

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डॉ. योगेश शुक्ला

(M.Com, B.Ed, M.Phil, Ph.D.) आप वर्तमान में असिस्टेंट प्रोफेसर (विभागाध्यक्ष), वाणिज्य विभाग के पद पर बनारस कॉलेज बकेवर, जिला इटावा में कार्यरत हैं। आपके पास शिक्षण एवं अकादमिक प्रशासन के क्षेत्र में 15 वर्षों का अनुभव है। आपके विभिन्न अंतर्राष्ट्रीय / राष्ट्रीय सम्मेलन / वर्कशॉप/पत्रिकाओं में 25 से अधिक शोध पत्र / लेख प्रकाशित हो चुके हैं। आपको ग्लोबल रिसर्च फाउंडेशन द्वारा "ब्रेस्ट एन्केटर" के अवार्ड से सम्मानित किया जा चुका है। इसके अतिरिक्त आप "इंटरनैशनल राष्ट्रीय मुक्त विश्वविद्यालय" के अध्यक्ष केंद्र 47038(बकेवर, इटावा) में कार्यरत हैं।



कुलदीप कुमार आर्य

(M.Com, B.Ed, LL.B, M.Phil, UGC-NET, CS (Inter)) आप वर्तमान में असिस्टेंट प्रोफेसर (विभागाध्यक्ष), वाणिज्य विभाग के पद पर, विद्या मंदिर डिग्री कॉलेज कायमगंज, जिला फर्रुखाबाद में कार्यरत हैं। आपके पास शिक्षण और अकादमिक प्रशासन के क्षेत्र में 20 से अधिक वर्षों का अनुभव है। आपके विभिन्न अंतर्राष्ट्रीय / राष्ट्रीय सम्मेलन / वर्कशॉप/पत्रिकाओं में 20 से अधिक शोधपत्र / लेख प्रकाशित हुए हैं। आप गैर सरकारी संगठन-एडुकेयर इंस्टीट्यूट ऑफ सोशल एंड टेक्निकल डेवलपमेंट के निदेशक हैं, यह संस्थान मेधावी एवम गरीब बच्चों की शिक्षा के उत्थान के लिए काम करता है। आप विभिन्न साप्ताहिक संगठनों के सक्रिय सदस्य भी हैं। आपने संवोचक के रूप में राष्ट्रीय स्तर के कई सेमिनार/वेबिनार आयोजित किये हैं। आप अपने पदाविद्यालय में विनेकानंद अध्ययन केंद्र के सचिवक भी हैं।



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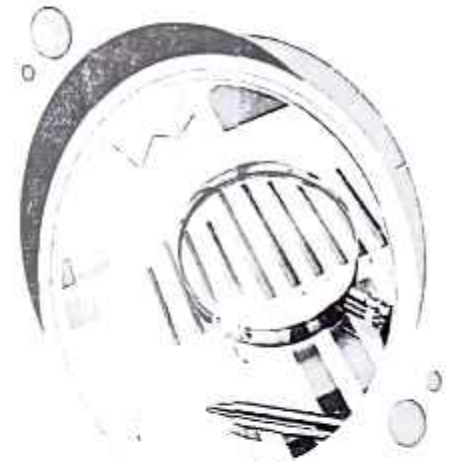


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डॉ. योगेश शुक्ला, कुलदीप कुमार आर्य

2020

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डॉ. योगेश शुक्ला

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डॉ. एन. ए. गुप्ता
(M.Com., B.E.C., M.P.H.S., Ph.D.)
अध्यक्ष, विपणन विभाग, जयप्रकाश विद्यापीठ, कोटा
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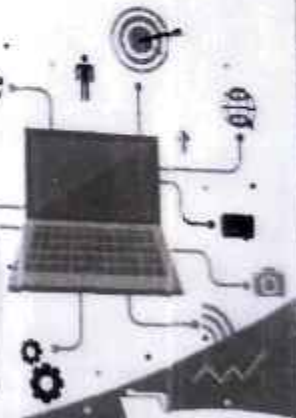
विपणन क्षेत्र में अत्यंत सफल प्रदर्शन के कारण उन्हें विपणन क्षेत्र में सर्वोच्च मान्यता प्राप्त है। अपने विपणन क्षेत्र में अत्यंत सफल प्रदर्शन के कारण उन्हें विपणन क्षेत्र में सर्वोच्च मान्यता प्राप्त है।

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डॉ. बंधु देव प्रसाद

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(Affiliated to C.S.J.M. University, Kanpur)

पत्रांक

Ref No/2023-24

दिनांक

Date.....

3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year

Sl. No.	Name of the teacher	Title of the book/chapters published	Calendar Year of publication
1	Dr. P. K. Rajput	Concept of Forestry	2021-22
2	Dr. Divya Jyoti Mishra	Fundamental of Soil Science	2021-22
3	Dr. Dharmendra Kumar	Mutation Breeding and Sustainable Food Production	2021-22
4	Dr. Dharmendra Kumar	Breeding Methods of A Biotic Stress Resistance	2021-22

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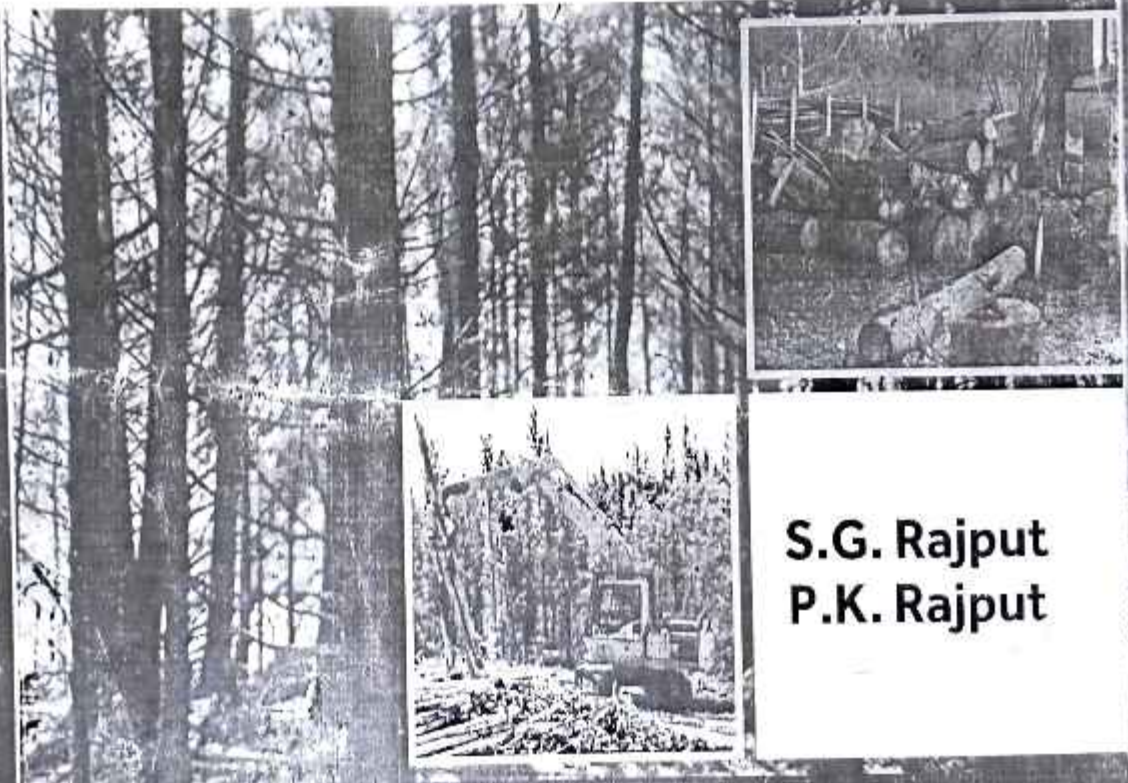
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CONCEPT OF FORESTRY

वानिकी की अवधारणा

(Bilingual/द्विभाषीय)

2021-22



S.G. Rajput
P.K. Rajput

KALYANI

About the Authors

Dr. Sri govind Rajput, came on earth 4th July 1986 in Auraiya district of Uttar Pradesh, with a passion to do something in life, and he want to earn name, fame and money. His awarded graduate degree from C.S Azad University of Agriculture & Technology, Kanpur, in discipline of Forestry, and post graduate study from JRF (ICAR) nominee from the Junagadh Agricultural University, Junagadh (Gujarat) in discipline of Soil Science & Agricultural Chemistry with Gold Medalist from the University.



Author also three times NET qualified and attended several times ARS interview, and his doctoral degree awarded in 2013 from C.S. Azad University of Agriculture & Technology, Kanpur. He started professional career from 2017 from the Assistant Professor in Soil Science & Agricultural Chemistry at Brahmmand PG College, Rath (Hamirpur) U.P-210431, affiliated to Bundelkhand University, Jhansi, beginning the assistant professor he joined in Soil Testing Company, Kisan Call Center, Assistant Manager (RD) in Syndicate Bank through IBPS, and selected in Field Assistant, Soil Survey of India, MoA, Govt. Dr. Rajput achieved "Young Scientist Award" and "Scientist of the Year" during 2020, and he is the life membership in several professional/scientific societies' national and international journals. He has published 5 Books, 18 Research Paper, 17 Abstract, 6 Articles etc. Dr. Rajput is Coordinator, Nodal Officer, In-charge, Members of different internal and external committee like BoS, IQAC and administrative; and His supervision of the College Agricultural Farm and Student Instructional Farm also. Recently Dr. Rajput Coordinate the Unnat Bharat Abhyan 2.0 project under the Ministry of Education, Govt. and IIT Delhi. Author sincere and ecstasy of delight to preparation of more information about forestry, this keen and valuable interest to constructive with great sentiments throughout the preparation of this text book.

Dr. P.K. Rajput, Associate Professor, Department of Soil Conservation, Janta P.G. College, Bakewar, Etawah. He studies B.Sc. (Ag. & A.H.), M.Sc. (Ag.) and Ph.D. Department of Soil Conservation and Water Management, C.S. Azad University of Agriculture and Technology, Kanpur-208002. He has an excellent academic background starting from matriculation to Ph.D. degree. He is awarded "Best Teacher Award" by National Conference on Recent Trends and New Frontiers in Biotechnology, Agriculture, Science and Environment -2020 at Agra. He has published numbers of research papers and articles in renowned of research journals. The author is also life time members of four scientific societies. He is the convener of Academic, member of Board of Studies and member of Academic Council in CSJM University, Kanpur. Author is sincere and ecstasy of delight to preparation of more information about Soil Conservation, Forestry, Agricultural Meteorology and Rainfed, Dry land Farming and Watershed Management. He have valuable interest in constructive the preparation of this text book.



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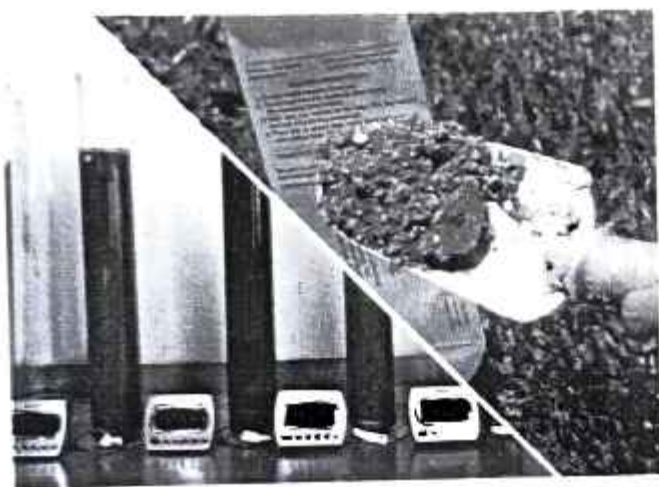
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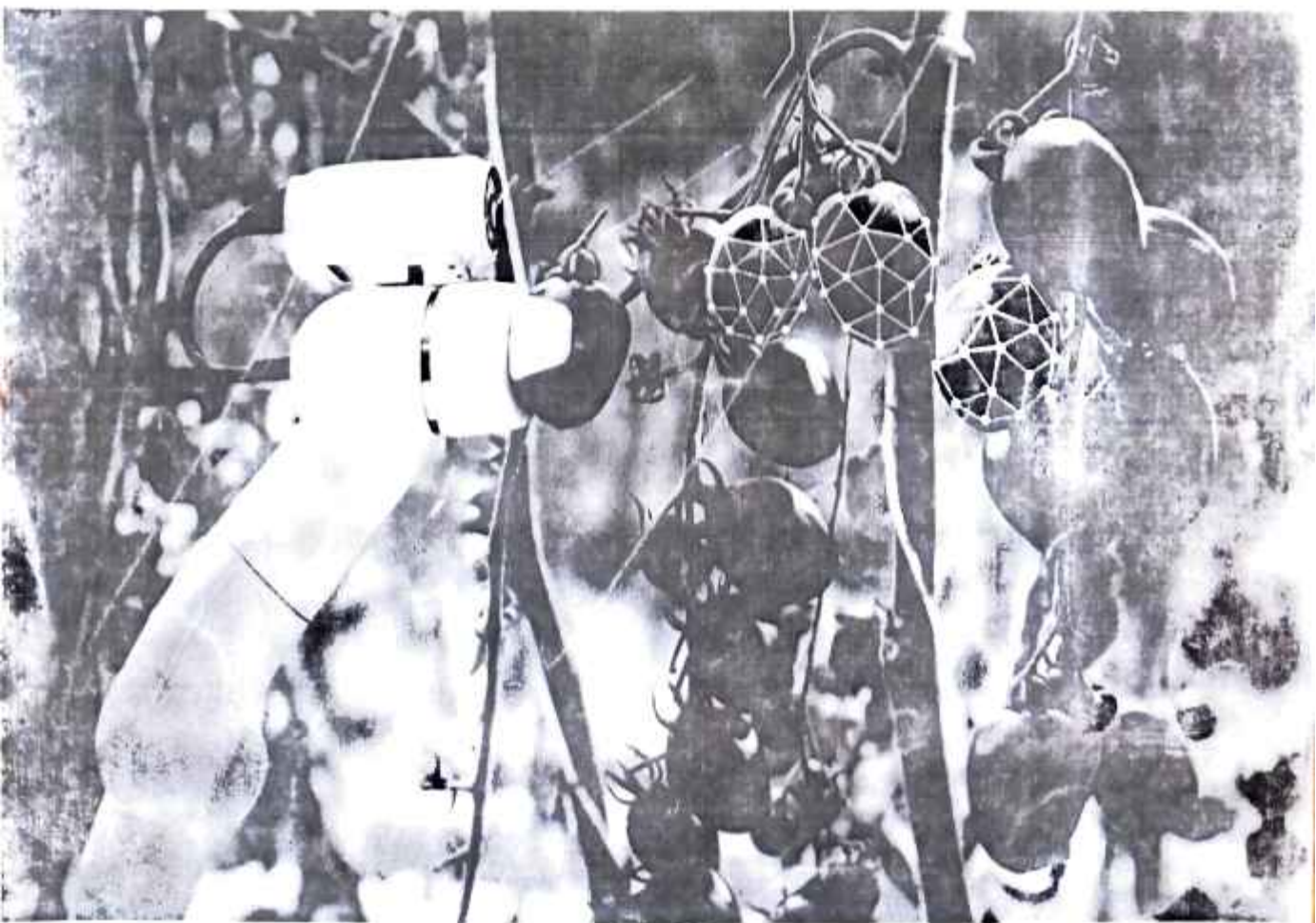
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A Text Book of

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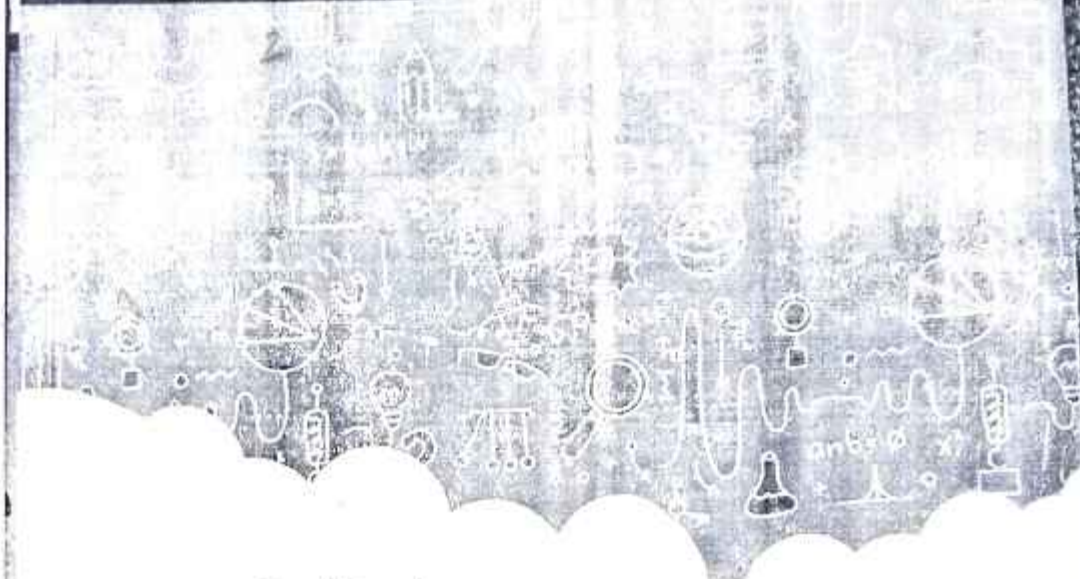
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Unit-V

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Unit-VI: Se

Pand N type semiconductors, carrier flow mechanism in forward & reverse and its characteristics, static and dynamic applications of Zener, Tunnel diode and Full wave rectifiers, calculator regulation, Basic idea about titration

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Bipolar Junction PNP and NPN diode, active, cut off & saturation region, transistor currents & relations, spreading resistance & transition Voltage Divider Bias circuit for amplifier (frequency response)

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Semester	Books	Authors
B.Sc. 1 st Sem. (w.e.f. 2021-22)	T.B.: Fundamentals of Chemistry T.B.: रसायन विज्ञान के मूलभूत सिद्धान्त T.B.: Quantitative Analysis (Practical: Eng + हिन्दी combined)	- Goyal & Others - गोयल व अन्य - Goyal & Others
B.Sc. 2 nd Sem. (w.e.f. 2021-22)	T.B.: Bioorganic and Medicinal Chemistry T.B.: औषधिक कार्बनिक और औषधीय रसायन P.B.: Biochemical Analysis (Practical: Eng + हिन्दी combined)	- Goyal & Others - गोयल व अन्य - Goyal & Others
B.Sc. 3 rd Sem. (w.e.f. 2022-23)	T.B.: Chemical Dynamics and Coordination Chemistry T.B.: रसायनिक गतिकी और उपसहसंयोजी रसायन विज्ञान P.B.: Physical Analysis (Practical: Eng + हिन्दी combined)	- Goyal & Others - गोयल व अन्य - Goyal & Others
B.Sc. 4 th Sem. (w.e.f. 2022-23)	T.B.: Quantum Mechanics and Analytical Techniques T.B.: क्वॉंटम यांत्रिकी और विश्लेषणात्मक तकनीक P.B.: Instrumental Analysis (Practical: Eng + हिन्दी combined)	- Goyal & Others - गोयल व अन्य - Goyal & Others
B.Sc. 5 th Sem. (w.e.f. 2023-24)	T.B.: Organic Synthesis-A T.B.: कार्बनिक संश्लेषण-अ T.B.: Rearrangements and Chemistry of Group Elements T.B.: पुनर्व्यवस्थापन और समूह तत्वों का रसायन विज्ञान P.B.: Qualitative Analysis (Practical: Eng + हिन्दी combined)	- Goyal & Others - गोयल व अन्य - Goyal & Others - गोयल व अन्य - Goyal & Others
B.Sc. 6 th Sem. (w.e.f. 2023-24)	T.B.: Chemical Energetics and Radiochemistry T.B.: रसायनिक ऊर्जा और रेडियोधर्मी रसायन विज्ञान T.B.: Organic Synthesis-B T.B.: कार्बनिक संश्लेषण-ब P.B.: Analytical Methods (Practical: Eng + हिन्दी combined)	- Goyal & Others - गोयल व अन्य - Goyal & Others - गोयल व अन्य - Goyal & Others

TEXT
BOOK

Bioorganic and Medicinal Chemistry

B.Sc. CHEMISTRY Semester-II

I.S.B.N. - 978-93-91152-76-5

Book Code No. - 2628-01 (B)

First Edition - 2022

Edition - 2023

M.R.P. - ₹ 240.00

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Bioorgan

AS PER NEP 2

Chemistry of Carbohydrates: Classification of monosaccharides, their open chain structure and cyclic structure (Haworth projection), configuration of Glucose (Fischer's projection), mutar rotation, interconversion of anomers, Fischer's projections of sugars (ascending and descending), mutar rotation; stepping-up (Killiani-Fischer) and stepping-down (Ruff) interchange of aldoses Linkage between

Chemistry of Proteins: Classification of primary and quaternary structure of proteins (primary structure by DNFB and Edman method) and C-terminal amino acids (upto dipeptides) by N-terminal amino acid determination Mechanism of enzyme action (Lock and Key theory).

Chemistry of Nucleic Acids: Constituent units (nucleotides), Synthesis of nucleic acids (types of RNA), Genetic Code, Biological

Introductory Medicinal Chemistry: Drug theory, Structure-activity relationships, Mechanism of action of the representative drugs (Aspirin, paracetamol); antibiotic (sulphonamide); antiviral agents (Acyclovir, zidovudine), HIV-AIDS related drugs (AZT-

Solid State: Definition of space lattice, Crystal field theory, Symmetry, Point group, Determination of crystal structure

Introduction to Polymer: Monomers, Linear, cross linked and network; plastic secondary bond forces in polymers; cohesion energy Average molecular mass (Mn), Mw, Z-average molecular mass (Mz), Light scattering method (iii) Gel permeation chromatography

Silicones and Phosphazenes - Silicones

Kinetics and Mechanism of Polymerization: Free radical polymerization, Free radical cationic polymerization, Condensation or step growth polymerization, epoxy resins and polyurethanes.

Synthetic Dyes: Colour and constitution of dyes, Malachite green, crystal violet, phenolphthalein

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Jyoti Bhadouria

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B.Sc. CHEMISTRY-I

(For B.Sc. 1st Semester students of All Colleges affiliated to universities in Uttar Pradesh)

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AUTHOR & PUBLISHERS

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- Goyal & Others

B.Sc. 2nd Sem. (w.e.f. 2021-22)

T.B.: Inorganic Chemistry

T.B.: औद्योगिक रसायन विज्ञान

T.B.: Medicinal Chemistry

T.B.: औषधीय रसायन विज्ञान

P.B.: Biochemical Analysis (Practical: Eng + हिन्दी combined)

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- गोपाल व अन्य

- Goyal & Others

B.Sc. 3rd Sem. (w.e.f. 2022-23)

T.B.: Chemical Dynamics

T.B.: रसायनिक गतिकी विज्ञान

T.B.: Coordination Chemistry

T.B.: उपरहसंगामी रसायन विज्ञान

P.B.: Physical Analysis (Practical: Eng + हिन्दी combined)

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T.B.: विश्लेषणात्मक तकनीक

T.B.: Quantum Mechanics

T.B.: संचालन गतिकी

P.B.: Instrumental Analysis (Practical: Eng + हिन्दी combined)

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- गोपाल व अन्य

- Goyal & Others

- गोपाल व अन्य

- Goyal & Others

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T.B.: Organic Synthesis-A

T.B.: कार्बनिक संश्लेषण - अ

T.B.: Rearrangements and Chemistry of Group Elements

T.B.: पुनर्व्यवस्थान और समूह तत्वों का रसायन विज्ञान

P.B.: Qualitative Analysis (Practical: Eng + हिन्दी combined)

- Goyal & Others

- गोपाल व अन्य

- Goyal & Others

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- Goyal & Others

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T.B.: रसायनिक ऊर्जा और रेडियोधर्मिता रसायन विज्ञान

T.B.: Organic Synthesis-B

T.B.: कार्बनिक संश्लेषण - ब

P.B.: Analytical Methods (Practical: Eng + हिन्दी combined)

- Goyal & Others

- गोपाल व अन्य

- Goyal & Others

- गोपाल व अन्य

- Goyal & Others

TEXT
BOOK**Fundamentals of Chemistry****B.Sc. CHEMISTRY-I**

- I.S.B.N. - 978-93-91152-59-8
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 level languages (Machine language, As
 hyperchem, etc.), internet application.

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B.Sc. CHEMISTRY-IV Semester

(For B.Sc. IV Semester students of All Colleges affiliated to Universities in Uttar Pradesh)

As per NEP - 2020 Syllabus (w.e.f. 2022-23)

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T.B.: Organic Synthesis-A

T.B.: कार्बनिक संश्लेषण-अ

T.B.: Rearrangements and Chemistry of Group Elements

T.B.: पुनर्व्यवस्थापन और समूह तत्वों का रसायन विज्ञान

P.B.: Qualitative Analysis (Practical: Eng + हिन्दी combined)

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T.B.: Chemical Energetics and Radiochemistry

T.B.: रसायनिक ऊर्जा और रेडियोधर्मी रसायन विज्ञान

T.B.: Organic Synthesis-B

T.B.: कार्बनिक संश्लेषण - ब

P.B.: Analytical Methods (Practical : Eng + हिन्दी combined)

B.Sc. 6th Sem. (w.e.f. 2023-24)

- Goyal & Others

- गोयल व अन्य

- Goyal & Others

- गोयल व अन्य

- Goyal & Others

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Quantum Mechanics and Analytical Techniques

B.Sc. CHEMISTRY Semester-IV

I.S.B.N. - 978-93-94511-92-7

Book Code No. - 2668-01

First Edition - 2023

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(बी.एससी. रसायन विज्ञान तृतीय सेमेस्टर के विद्यार्थियों के लिए सर्वोत्तम उपयोगी पुस्तक)

एन.ई.पी. - 2020 के पाठ्यक्रमानुसार (w.e.f. 2022-23)

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पी.पी.एन. (पी.जी.) कॉलेज, कानपुर (उ.प्र.)

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1st Edition

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About the Editors



Dr. Nisha Zinghoni is working in Department of Botany, S. K. J. D. Degree College, Kanpur Dehat, UP. He was awarded with Ph.D. on the topic 'Soil Plant as influenced by Azolla as Organic Component' by C.S.J.M. University, Kanpur. His research specialization includes Biofertilizer, Ecology, Ethnobotany, Taxonomy, etc. He has 10 years teaching experience in various higher educational institutions at Graduate Level. Dr. Zinghoni was honored with some professional awards like Aal San rasta Award (2013), Indian Global Golden Award (2017), Scientist of the Year Award (2018, 2019) Socio-Environmental Award (2019) etc. He has awarded his research work through more than 30 international and national level conferences, 50 forum, workshops, webinars, etc. He is the Member of 7 Scientific Societies and received 1 Fellowship. He has published 15 papers in refereed journals, 20 popular articles in different magazines, 6 papers in conference proceedings, 22 book chapters and 2 books. He has organized 7 research events in the college.



Dr. Laxi Gupta born on Oct. 1, 1979 is currently working as Head, PG department of zoology Janta College, Bakewell, Lucknow, UP. He did his post-graduation in zoology from JBS College, Kanpur, where he headed department of microbiology from 2003 to 2010. He has teaching and research experience of 13 years. He has published 10 research papers in journals of national and international level. He has attended more than 20 conferences and workshops and presented research papers. There are 6 Fellowships in his credit. He is member of editorial board of 3 National and International journals. He has a number of the manuscripts and has been awarded fellowship of research bodies in college besides heading the department of zoology. He has additional charge of department of botany and department of biotechnology & microbiology. He also holds the chair of coordinator, IQAC in college. He has got best regular award in 2019 for his contribution in education world.



Dr. Yogesh Babu Das has about 21 years of experience of teaching and research in zoology and currently working as Associate Professor & Head, postgraduate department of Zoology, Janta (Maharajgaleya) Animal University, P. He has published more than 20 research papers and guided students of M. Sc. & Ph.D. He availed fellowships and life membership of academic bodies. At present he is member of board of studies, zoology, C.S.M. University, Kanpur, and coordinator, IQAC & NAAC Committee in college.

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और कंप्यूटर आधारित जीवविज्ञान**

Dr. Lalit Gupta

Dr. Kumud Rai

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About the Book (पुस्तक के विषय में)

This textbook introduces details of **Zoology – Gene Technology, Immunology and Computational Biology** in a systematic way. Unit 1 contains details on principles of gene manipulation and gene transfer techniques. Unit 2 specifies introduction to applications of genetic engineering and contains the development of DNA drugs and vaccines. Units 3 and 4 specifies concepts of DNA diagnostics and immune system with its components. Units 5 and 6 contain the general concepts, calculation of biostatistics. Unit 7 specifies introduction to basics of computers and unit 8 contains the details of bioinformatics.

यह पाठ्यपुस्तक जन्तुविज्ञान – जीन प्रौद्योगिकी, प्रतिरक्षा विज्ञान एवं कम्प्यूटेशनल जीवविज्ञान को व्यवस्थित तरीके से पेश करती है। इकाई 1 में जीन मैन्युपुलेशन और जीन स्थानान्तरण तकनीकों के सिद्धांतों पर विवरण शामिल है। इकाई 2 अनुवांशिक इंजीनियरिंग के अनुप्रयोगों के परिचय को निर्दिष्ट करती है और इसमें डीएनए दवाओं और वैकसीन का विकास शामिल है। इकाई 3 और 4 इसक घटकों के साथ डीएनए निदानों और प्रतिरक्षा तंत्र की अवधारणा को निर्दिष्ट करते हैं। इकाई 5 और 6 में सामान्य अणुवैज्ञानिक [जीवसांख्यिकी] और जैवसांख्यिकी [II] की गणना शामिल है। इकाई 7 में कम्प्यूटर की मूल बातों का परिचय दिया गया है और इकाई 8 में जीव सूचना विज्ञान का विवरण दिया गया है।

About the Author (लेखक परिचय)



Dr. Lalit Gupta is presently working as **Head, Department of Zoology, Janta College, Bakewar, Etawah** affiliated to CSIM University, Kanpur. He holds teaching and research experience of **19 years**. His field of specialization is Entomology. Apart from Zoology, he is also in-charge of Department of Botany, Microbiology and Biotechnology in the college. He is a coordinator of NAAC steering committee of college. He has published more than **24 research papers** and articles in different journals of National and International repute. There is one edited book and 6 invited lectures to his credit. He has been actively engaged in organizing various research and academic activities in the department. He is a life member and fellow member of various prestigious research bodies. He is a member of Editorial Board of many research journals. He has also received Best Teacher Award in 2019 for his contribution to society in the field of education.



Dr. Kumud Rai is presently working as an **Assistant Professor & HOD (Science Dean)** in the Department of Zoology in **S.T.D.P.G. College Kadiapur, Sultanpur, U.P. India**. She has qualified **Ph.D** from Prayagraj (Allahabad). She has attended about **35 National and International conferences**. She has presented **20 research papers** and **20 journal papers**. She has received many National Awards during the research period. She has been many times awarded by the **Young Scientist Award** in the field of research work and has got an **Innovative Faculty Award** from the Blue Planet Society of Allahabad, Prayagraj. She has also participated in the Oriental program and many workshops at Prayagraj. She has been teaching at U.G. and P.G. level for **16 years**. She is awarded for the work of NEP 2020 in the field of Higher Education.



डॉ. मनोज चन्द्र काण्डपाल वर्तमान समय में **जे.पी.एच. पी. जी. कॉलेज, नैनोताल रोड, बरेली** में निदेशक पद पर कार्यरत हैं। आपने एम.एस.सी. प्राणी विज्ञान में बी.एच.डी. की उपाधि एच.जे.पी. कॉलेज, बरेली विश्वविद्यालय बरेली से प्राप्त की है। आपको अभी तक 8 बार सर्वोच्च शिक्षक सम्मान प्राप्त बरेली में दिवंगत संस्थानों द्वारा प्राप्त हो चुका है। अभी तक आपको द्वारा 45 से अधिक राष्ट्रीय और अंतरराष्ट्रीय पत्रिकाओं एवं समाचार पत्रों में लेखन, लेख प्रकाशित किये गये हैं। आपको इन्डियन साइंस काउंसिल कलकत्ता, जुलोजीकल सोसाइटी ऑफ इण्डिया गया, सोसाइटी ऑफ लाइफ साइंसेज सतना, इण्डियन एकेडमी ऑफ एनवायरनमेंट साइंस हरिद्वार एवं सोसाइटी फॉर रिसर्च इन बायोलॉजिकल साइंस, बरेली के अलायन सदस्य एवं फेलोशिप प्राप्त है। आपको उच्च सरकार द्वारा नई शिक्षा नीति 2022 क्रियान्वयन में उत्कृष्टतम योगदान हेतु शिक्षक दिवस 05 सितंबर 2021 के अवसर पर सम्मानित भी किया गया। शिक्षा के क्षेत्र में आपको **24 वर्षों** का अनुभव है।



डॉ. रक्षु अग्रवाल वर्तमान समय में **तिलक महाविद्यालय, औरैया** में जन्तु विज्ञान विभाग में **असिस्टेंट प्रोफेसर एवं विभागाध्यक्ष** का पद पर कार्यरत हैं। आपने एम.एस.सी. तथा एम.फिल. की शैक्षिक योग्यता आगरा विश्वविद्यालय, आगरा से प्राप्त की है तथा बी.एड. दयालबाग विश्वविद्यालय आगरा से किया है। आपको शिक्षा के क्षेत्र **21 वर्षों** का अनुभव प्राप्त है। आपका मानना है यद्यपि शिक्षक का स्थान पुस्तकें नहीं ले सकती है परन्तु यह भी सत्य है कि शिक्षक हर स्थान तथा समय पर छात्रों के मार्गदर्शन हेतु उपस्थित नहीं हो सकता है। ऐसे समय में पुस्तकों ही शिक्षकों की अनुपस्थिति में छात्रों को ज्ञान प्रदान करती हैं।

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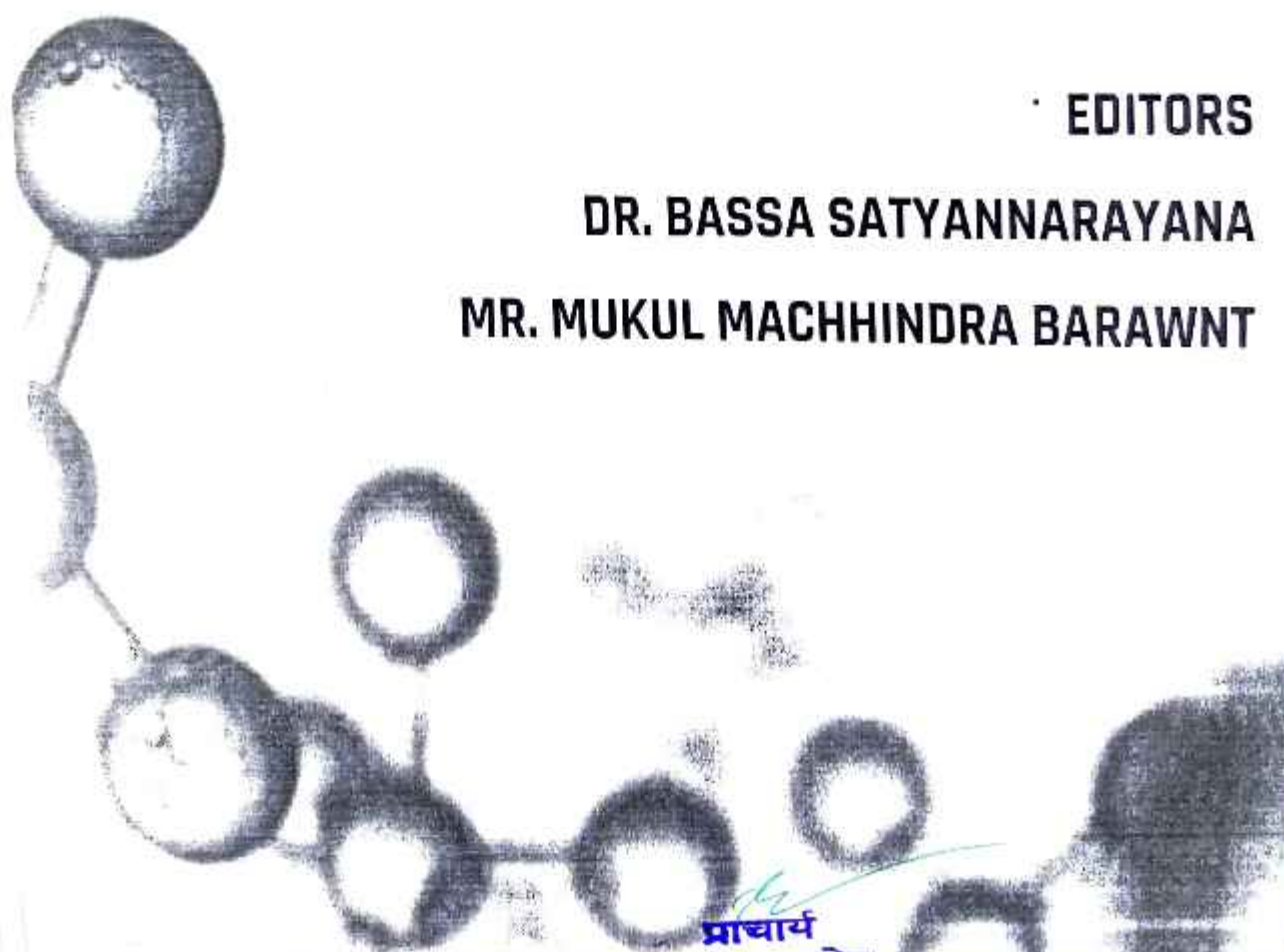


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1

TRANSPORT AND THERMODYNAMIC PROPERTIES OF ASSOCIATED FLUID MIXTURE AT VARIOUS TEMPERATURES

NAVEEN AWASTHI

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ABSTRACT

Density, viscosity, surface tension and refractive index are the basic data used in various physico-chemical analyses of multicomponent fluid mixtures. Various predictive models were used for the computation of these thermodynamic and transport properties. In this work Prigogine-Flory-Patterson (PFP) model based on non-associated process was used to evaluate viscosity, excess viscosity, excess volume and surface tension and Lorentz-Lorentz relation was used to evaluate the refractive index of binary mixture of 2-propanol and 2-phenyl ethanol over the entire composition ranges from temperature 298.15-318.15K and atmospheric pressure. The computed results were compared with literature values. Excess viscosity and Excess volume were also computed to observe the extent of molecular interactions between the binary components. Lorentz-Lorentz relation deals a fair agreement with measured values while result computed from PFP model are very compatible to measured values but still modifications are required.

KEYWORDS: viscosity, surface tension, refractive index, Binary mixture, Excess function.

INTRODUCTION

In chemical industry the knowledge of transport and thermodynamic properties of liquid mixtures have a considerable importance in many technological areas such as process simulations and liquid-liquid extraction and molecular dynamics (Wang *et al.*, 2005 and Mchaweh *et al.*, 2004)). Density, viscosity, surface tension and refractive index are intensive thermodynamic properties. Which do not depend upon the quantity of the substances? These transport and thermodynamic properties consist of a wide application in pharmaceutical, agrochemicals and petroleum industry. Experimental as well as theoretical study of viscosity and Excess viscosity (Awasthi *et al.*, 2022) of non-polar liquid mixture help us to understand the transport behaviour of protic and aprotic solvents. Excess volume and surface tension (Awasthi *et al.*, 2019) were evaluated at different temperatures for different alcohols. Refractive index is an intensive thermodynamic property, which does not depend on the amount of the substance. It is basically used for the identification and confirmation of the purity of substance. The prediction of refractive index of binary and multicomponent liquid mixtures (Pandey *et al.*, 1999) is essential for designing various physico-chemical calculations in terms of heat and material transfer. Refractive index depends upon frequency of the light used. Normally Yellow

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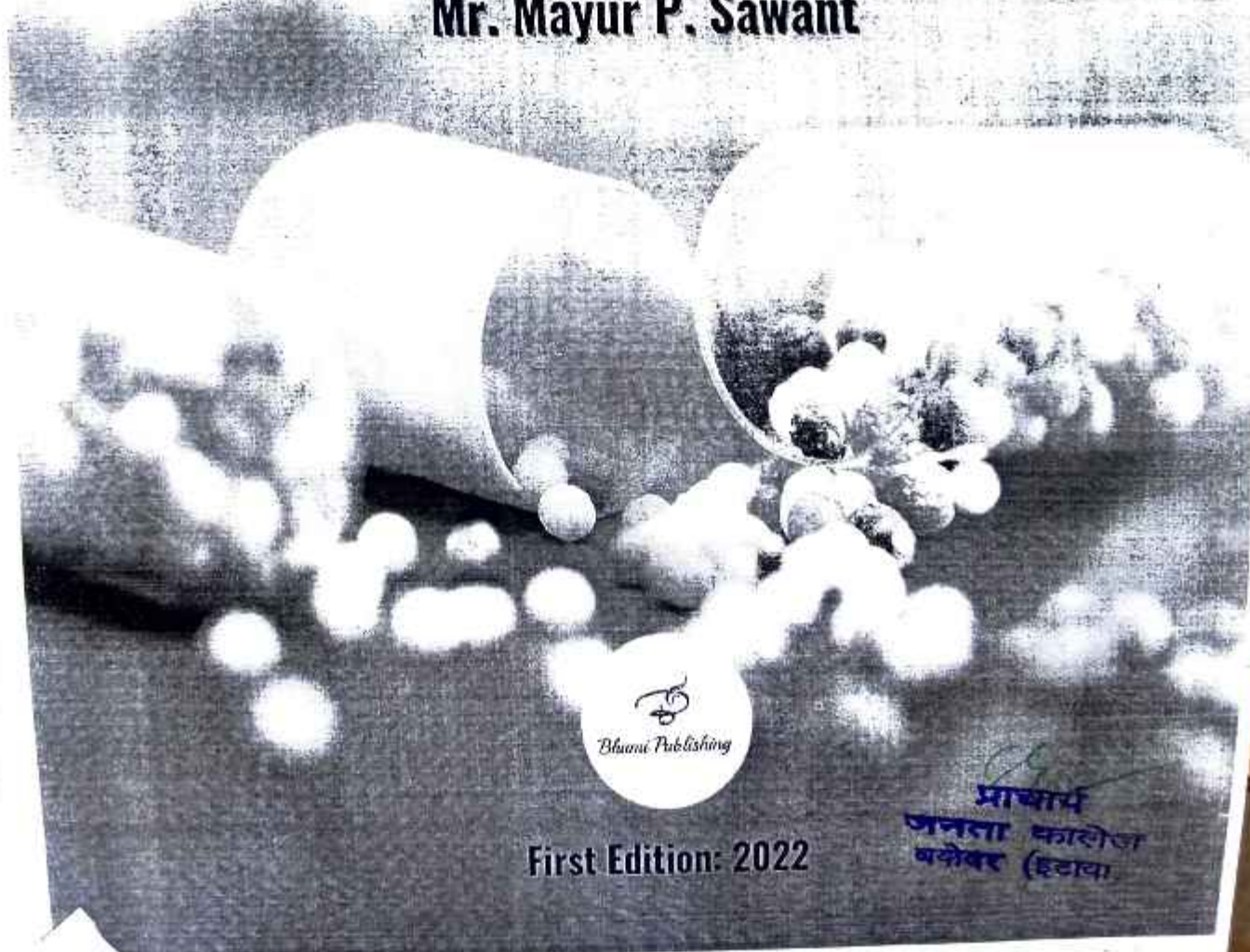
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THERMO-ACOUSTICAL ANALYSIS OF BINARY LIQUID MIXTURE FROM 298.15-318.15K

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Abstract:

Intermolecular free length (L_f) and excess acoustical parameters such as excess isentropic compressibility (β_s^E), excess acoustical impedance (Z^E) is very important tool for the determination of internal structure and intermolecular interaction of pure liquids and liquid mixtures. Intermolecular free length (L_f), excess isentropic compressibility (β_s^E), excess acoustical impedance (Z^E) was computed for butan-2-ol and dodecane system from free length theoretical model over the entire concentration range from 298.15-318.15 K and 1atm pressure. The variation of these thermo-acoustical parameters with concentration at different temperatures helpful in understanding the molecular interactions between the different components of liquids. Non-linear variation of excess acoustical parameters confirms the molecular association in term of compressibility factor.

Keywords: Free length theory, Excess acoustical parameters, Molecular interaction, Binary liquid.

Introduction:

In recent years acoustical analysis based on ultrasonic method has become a powerful tool in the prediction of various physico-chemical and thermodynamic properties of multicomponent liquid mixture. These properties play a significant role in the construction of predictive models and development of processing and product formulation Nori *et al.* (2020) in various pharmaceutical and industrial applications. The variation of intermolecular free length and excess acoustical parameters with molar concentration helpful in the prediction of molecular interactions Nain *et al.* (2020) present in the liquids when they are mixed. The result obtained from these molecular interactions of liquids at different temperatures helpful in the preparation and the preservation of food and various pharmaceutical items such as liquid injections, syrup, tablets, and drug doses Chimankar *et al.* (2021) An exhaustive literature survey reveals that various researcher Natarajan *et al.* (2011) and Santhi *et al.* (2012) have evaluated ultrasonic velocity and excess acoustical parameters from statistical Flory *et al.* (1965) as well as other theoretical liquid state models Nomoto *et al.* (1958) and Dael *et al.* (1968) and compared with experimental values at different temperatures and predict the molecular interactions, Pandey *et*

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MATHEMATICAL CORRELATION OF VISCOSITY OF ASSOCIATED POLYMERIC SOLUTION AT DIFFERENT TEMPERATURES

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Abstract:

Viscosity of binary liquid mixture have been computed for 2-propanol and benzyl alcohol from McAllister three body (Mc3), four body (Mc4) based on Eyring's theory absolute reaction rate. Which correlate various thermodynamic properties of liquids using the concept of additivity and Jouyban Acree (JA) model based on least square regression analysis method at different temperatures and compared with the measured work of Ching-Ta, and Chein-Hsiun Tu. Standard deviation was the criterion of the success of results. Jouyban Acree (JA) model found to be more consistent with experimental findings.

Keywords: McAllister, Jouyban Acree, Correlation models, benzyl alcohol.

Introduction:

In past few years viscosity of pure liquids, binary and multi component liquid mixtures has become subject of deep interest for chemists in pharmaceuticals (Chimankar et al., 2021) and industrial application such as process simulation, equipment design and molecular dynamics (Mchaweh et al., 2004) and Wang et al. (2005). sometimes experimental determination of transport and other thermodynamic properties of liquid mixtures are very difficult. In that case theoretical models play a significant role in the determination of various thermodynamic and transport properties. To fulfill this requirement various researchers (Shukla et al., 2017) have formulated theoretical models to determine the theoretical viscosity in the absence of experimental results. In the continuation of previously published work (Awasthi et al., 2019) and Awasthi (2021), this book chapter deals with a comparative study of two correlation models such as McAllister multi body interaction model (McAllister (1960) and Jouyban Acree model (Jouyban et al., 2005) and (2020) at different temperatures to determine the theoretical values of viscosity and compared with the measured values (Ching-Ta et al., 2007). The main aim of this work is to compare and test the validity and applicability, these models at different temperatures for associated polymeric solutions.

Correlation models

McAllister multi body interaction model

McAllister multi body interaction model based on Eyring's theory of absolute reaction rate correlate the various thermodynamic properties of liquids using the concept of additivity. Eyring proposed an empirical equation to relate viscosity of liquid with temperature:

$$\partial = \frac{hN}{M} e^{\Delta G^*/RT} \quad (1)$$

Where ∂ = Kinematic viscosity

h = Planck constant

प्राचार्य
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बकेवर (इटावा)

Psychrophilic microbes: Biodiversity, beneficial role and improvement of cold stress in crop plants

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11.1 Introduction

Throughout the life cycle of plants, they face a multitude of stress such as biotic and biotic factors. Microbial stress, usually associated with edaphic and climatic components of the environment, substantially decreased plant yields below optimum levels. The important abiotic factors hinder the agricultural productivity, almost globally are soil composition, extreme salinity, acidity, non-optical temperature, drought, pollution, rain, wind and low soil fertility (Malyan et al., 2016). Among them, low temperature is a major threat to food security and affecting economically important crop losses worldwide. Extreme low temperature symbolizes unprecedented ecosystems that harbor diversity of microbes called psychrophilic and cold-loving microorganisms.

A significant portion of the Earth's biosphere is safeguarded by cold and numerous microbes of particular importance in global ecology found in polar and alpine terrestrial and aquatic environments (Popen and Christner, 2004). Approximately 20 percent of Earth's surfaces occupied by ice with Greenland and Antarctic ice sheets covered 10 percent of the

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प्राचार्य
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5 IMPACT OF GLOBAL WARMING IN INDIA: AN INTRODUCTORY OVERVIEW

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ABSTRACT

The average temperature of the planet is rising as a result of global warming, which is caused by an increase in greenhouse gases. The purpose of this study is to comprehend the dangers of climate change, particularly global warming. The study's findings demonstrate the likely effects of rising temperatures. Since the 1950s, a decrease in monsoon rainfall has already been noted. Events with a lot of rain have happened more frequently as well. There is evidence that certain regions of South Asia have become drier and more drought-prone since the 1970s. India is heavily reliant on groundwater because more than 60% of its agriculture depends on rain. Even in the absence of climate change, India's groundwater supplies are overused to the extent of 15%. On the other hand, the majority of Himalayan glaciers, where the warmer monsoon provides a significant portion of the moisture, have been retreating over the past century. With a substantial portion of the city constructed on reclaimed land below the high