

Dr. Sagarika Datta

About the Book

In this book *In Search for De Re Identity*, the author discusses one of the central philosophical issues, "The Identity of things". We know that metaphysics deals with the identity of things, i.e., "What they are?". Here, the author is in search of that identity which makes the thing What It Is, by which we can single out or pick out an object and distinguish it from other possible objects. In order to search of that identity she has gone through an extensive survey of literature where she begins with discussing Aristotle's notion of essence, whether there is any essential predicate that signifies the essence of the things. This is followed by a discussion of the views of Quine, Kripke, Plantinga and Adams.

For Quine, admitting quantification within the modal framework is feasible provided that we admit the possibility of *De Re Necessity*. Quine attacked the possibility of "*De Re Necessity*" on an open context as it violates the principle of extensionality. Hence also rejected the authenticity of quantification into modal context that QML requires. In contrast, necessity, as expressed by a semantical predicate applicable solely on the names of statements, does not hold the principle of substitutivity, rather impels referential opacity.

In this context, the author of *In Search for De Re Identity* discusses a highly controversial issue : whether there is a definite description for every proper name or whether proper names are mere rigid designators. Though for Plantinga, proper names do not stand for bare particulars, they express properties. However, one characteristic that Plantinga attributes to proper names is that they rigidly designate their referents.

Apart from that she has discussed later Wittgenstein as well who had himself suggested that there are certain 'rock bottom' of our usages – which are not the material origin or atomic structure of objects, but are the forms of living that are the conditions of possibility of all phenomena.

Any investigation into essences should be geared to a ruthless task of problematising essences and not presuming them at the outset. Otherwise we cannot ensure that we achieved our outcome through an honest and laborious exercise, rather than through a popular rhetoric or the common-sense imageries of a permanent beyond temporary, an abiding beyond the transient, or a core beyond the husk. The author has tried to determine if there is any essentialist stance among these analytic philosophers' views within this exercise.



PRESTIGE PUBLISHERS

A prestigious name in the field of Knowledge and Education since 1976

A-1B/96-B, Krishna Apartments
Paschim Vihar, New Delhi-110063
Mob.: 9811047234, 9213156651

E-mail : prestigepublishers09@yahoo.com
prestigepublishers09@gmail.com

Rs. 995



About the Author

Dr. Sagarika Datta did her graduation in Philosophy from Presidency College, Calcutta University in 2000. She did her Masters and M.Phil in Philosophy (with special paper Logic) from Calcutta University in 2002 and in 2004 respectively. She has been awarded fellowship from Indian Council of Philosophical Research in 2006 and awarded Ph.D in the area of Quantified Modal Logic from University of Delhi in 2019. She has almost 15 years of teaching experience. She has been working in Kirori Mal College, University of Delhi as a permanent faculty with the department of Philosophy since 2008. Apart from this book, she has many more research publications of which one is in reputed journal JICPR, Springer. She has attended and presented several papers in international conferences held in National Research Institute, Moscow and Trinity College, Dublin. She was a member of Calcutta Logic Circle and attended a national workshop on Logic, Philosophy and Applications at Calcutta Logic Circle. Her areas of specialization and interest are Logic, Western Philosophy, Analytic Philosophy and Philosophy of Logic.

Price: Rs 995

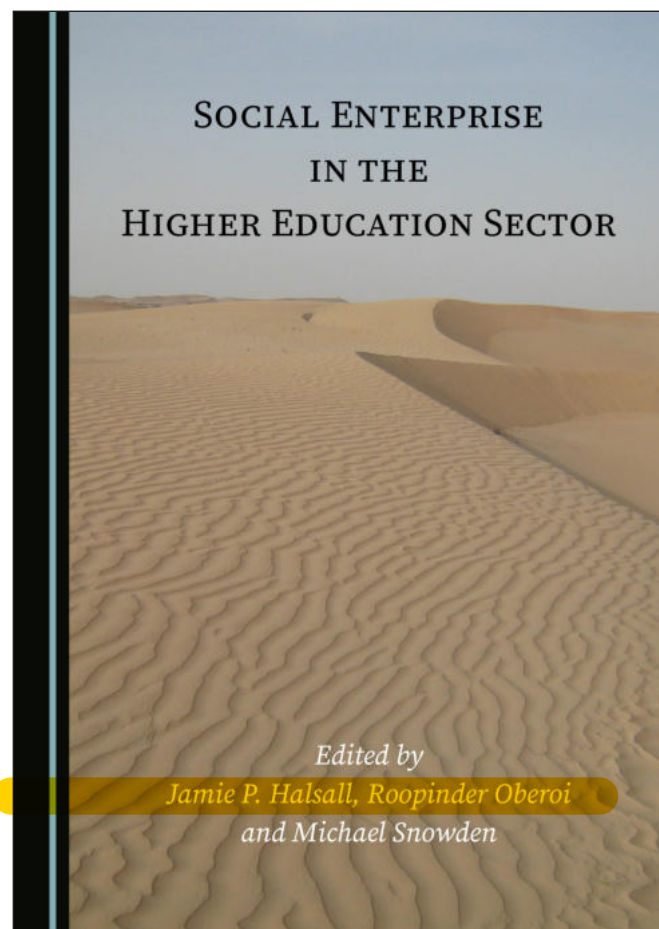
ISBN: 9788194063841

Contents

<i>Introduction</i>	1
1. Aristotle on Essence	29
1.1 Primary and Secondary Substance: Primary Substance is Essence	30
1.2 Four Types of Changes : The Unchanging Ultimate Property is Essence	31
1.3 Form and Matter: Form is Essence	34
1.4 Definition and Essence	36
1.5 Essence in Categories and Essence in Metaphysics	38
2. Quine's Attack on Essence	40
2.1 Meaning and Reference	40
2.2 Mill on Proper Name	41
2.3 Frege-Russell on Proper Name	43
2.4 Quine on Proper Name	44
2.5 Extensionality and Referential Opacity	45
2.6 Failure of Extensionality and Referential Opacity	46
2.7 Modality and Quantification	48
3. Kripke and Plantinga on Essence	52
3.1 Kripke's Account of Essence in Naming and Necessity	52

3.2	Plantinga on Essence and Necessity	63
4.	Adams on Primitive Thisness and Primitive Identity	93
4.1	Adams's Account of Individual, Thisness and Suchness	93
4.2	Adams's Critical Exposition of Leibnitz's Theory of Singularity, Completeness and Reference	93
4.3	Adams's Treatment of the Principle of I.I.	98
4.4	Adams Against Hacking's Objection to the Spatial Dispersion Argument	100
4.5	Adams's Special Argument Against the Principle of I.I	101
4.6	Adams on de re Modality, de re Identity, Primitive Identity vis a vis Non-Qualitative Identity	103
4.7	Adams on Leibnitz's Notion of Primitive Thisness	104
4.8	Adams's Theory of Transworld Identity as Non-Qualitative	105
4.10	Comparison between Scotus, Kripke and Adams	123
5.	Later Wittgenstein's Attack on Essence	126
5.1	Relationship between Language and Reality	127
5.2	Tractarean Essence of Language and Reality	128
5.3	Tractatus vs Philosophical Investigations	129
5.4	Later Wittgenstein's Denial of the Essential Structure of Language and Reality	131
5.5	Language-games vis a vis Transworld Essence	133
	Conclusion	135
	<i>References and End-Notes</i>	136

Social Enterprise in the Higher Education Sector



[View Extract](#)

[Description](#)

[Editor Bio](#)

[Reviews](#)

Social enterprise is becoming an increasingly crucial feature within the higher education sector. Traditionally, it sits within business and economic subject areas, but has close ties with the community sector, where the concept is seen as a linchpin connecting the public, private and voluntary sectors together. The connection that social enterprise offers is seen by many governments around the world to have the potential to galvanize economic growth after the global financial crisis of 2008. Social enterprise is becoming an ever-more important aspect of research, teaching and learning, especially in the higher education sector. Universities across the world perceive it to be an advantage to students trying to obtain a job after completing their studies. Further to this, the study of social enterprise also provides opportunities for students to set up their own organizations in profit or non-profit settings. This edited volume provides a

joined-up thinking approach to social enterprise within the social sciences. The contributions here examine theoretical approaches to social enterprise, addressing its influence on wider society and its fundamental importance within the higher education sector. Merging these ideas, the book offers a number of best practice examples of social enterprise within teaching and learning in the social sciences.

Buy This Book

▼ Hardback

ISBN: 1-5275-6163-1

ISBN13: 978-1-5275-6163-2

Release Date: 10th February 2021

Pages: 196

Price: £58.99

-

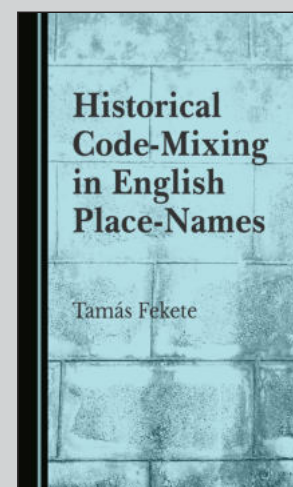
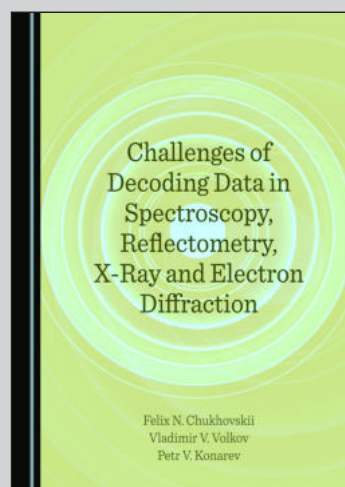
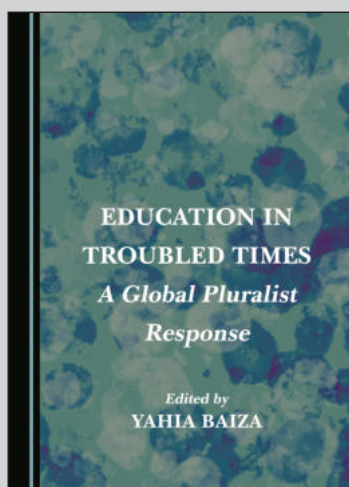
1

+

Add To Basket

New and Forthcoming

Shop All



[About Us](#)
[Buy a Book](#)
[Publish With Us](#)
[Meet our Editorial](#)
[Advisors](#)
[FAQs](#)
[News](#)
[Sales Agents](#)
[Contact](#)
[Login](#)
[Register](#)
[Unsubscribe](#)

Cambridge Scholars
Publishing |
Registration Number:
04333775

Please note that
Cambridge Scholars
Publishing Limited is
not affiliated to or
associated with
Cambridge University
Press or the
University of
Cambridge



**Cambridge
Scholars
Publishing**



Copyright © 2022
Cambridge Scholars
Publishing. All rights
reserved.

[Careers](#)

[Sustainability
Statement](#)

[Equality
Statement](#)

[Cookies](#)

[Privacy](#)

[Terms and
Conditions](#)

[Site
Map](#)

Designed and Built by Prime Creative

PLANTS, MICROBES AND DISEASES

**Dr. Rajni Gupta
Gaurav Chugh**

PLANTS, MICROBES AND DISEASES

Plant diseases are caused by several microorganisms such as bacteria, fungi and viruses. They significantly affect plant health and productivity. Recent advances in molecular and genomics of plant diseases raises a need to integrate knowledge of microbial taxonomy, genomics, and plant pathology that reflects state-of-the-art knowledge about plant-disease mechanisms. This book provides a concise but comprehensive description of plant diseases with special focus on plant diseases caused by numerous microbial pathogens, from a plant biologist's and a microbiologist's point of view. This book includes chapters on diseases caused by fungi, bacteria, virus, and nematodes and provides an improved understanding of the epidemiology, current concepts of pathogenesis and mechanisms of their biology. It provides the most recent information on the classification of plant pathogenic microbes, causes, mode of transmission, symptoms and treatments of important plant diseases also taking into consideration the molecular interactions between host cells and infectious agents. The presentation of these topics is followed by a discussion on systemic and biological control of diseases, as well as postharvest diseases of plant products and studies on AM fungi. The book provides necessary references, basic lab techniques and literature citations to allow a more detailed investigation of particular diseases and control. This book would be indispensable for researchers and will also serve as a textbook for advanced undergraduate and postgraduate students of disciplines of botany, plant pathology, crop science and microbiology.

SALIENT FEATURES

- Explores the role of microbes in the pathogenesis of common plant diseases.
- Excellent resource for both undergraduate and postgraduate courses in Botany, Agriculture, microbiology and related domains.
- Latest and updated information of plant pathogenic microbes with comprehensive diagrams and photographs.
- Describes several specific plant diseases (both pre- and post-harvest) caused by fungi, bacteria, virus and nematodes.
- Practical disease management strategies controlling enormous losses caused by these plant diseases.
- Latest information on genetic, molecular and biological techniques in control of plant diseases.
- Includes section on AM fungi and basic lab techniques in microbiology.

Dr. Rajni Gupta teaches in the Department of Botany, Kirori Mal College, University of Delhi, Delhi. She got her M.sc and Ph.D from Agra College, Agra. She did Post Doctoral work in the Department of Botany, University of Delhi, Delhi with Prof. K.G. Mukerji. She has worked in the field of Mycotoxins, Mycoherbicides and VAM fungi. She worked on Association of VAM fungi in lower plants of Uttarakhand. She also worked on phytoremediation of heavy metals present in soil by angiosperms. She has published more than 45 research papers in national and international journals of repute. She has edited "Advances in Microbial Biology and Taxonomy Past Present and Future". She has authored *The Fungi, Microbial Technology and Biotechnology* and Unitext for Freshmen: Biology.

Gaurav Chugh, Hardiman School, National University of Ireland Galway (NUI Galway), is doing his PhD in functional environmental microbiology. He is a Postgraduate in Botany from Department of Botany, University of Delhi and Graduate in Botany (Honours) from Department of Botany, Kirori Mal College, University of Delhi. He has worked as project associate at TERI-Deakin Nanobiotechnology Centre at The Energy and Resources Institute (TERI), Delhi. He has been on the merit list at University of Delhi (2012) and a scholarship holder from Department of Botany, Kirori Mal College, University of Delhi. He has worked in university funded innovation project on bioremediation and has published three research articles in journals of international repute. He has attended and presented papers and posters in numerous national and international conferences.



I.K. International Pvt. Ltd.

4435-36/7, Ansari Road, Daryaganj, New Delhi-110002, India
E-mail: info@ikinternational.com



www.ikbooks.com

Contents

<i>Preface</i>	vii
1. INTRODUCTION	1
1.1 Classification of Plant Diseases	4
1.2 Losses caused by Plant Diseases	6
1.3 Symptoms of Diseases	13
1.4 Prevention and Control of Diseases	18
<i>Exercise</i>	29
2. HOST-PARASITE INTERACTION	31
2.1 Introduction	31
2.2 Inoculation	32
2.3 Penetration Phenomena	33
2.4 Spore Germination and Perception of Host Surface	34
2.5 Formation and Maturation of Appressoria	36
2.6 Host and Pathogen	37
2.7 Defense Mechanism	40
<i>Exercise</i>	41
3. DISEASE RESISTANCE	43
3.1 Introduction	43
3.2 Vertical Resistance	43
3.3 Horizontal Resistance	44
3.4 Flor's Gene for Gene Hypothesis	45
3.5 Modes of Inheritance	46
3.6 Cultural Practices	49
<i>Exercise</i>	56
4. BIOCONTROL OF DISEASES	57
4.1 Introduction	57

4.2	Biocontrol Agents	
4.3	Potential Biocontrol Fungi	
4.4	General Mechanism of Biological Disease Control	59
4.5	Mechanism of Action	60
4.6	Commercialization of Biocontrol Agents	60
4.7	Techniques for Application of Fungal Biocontrol Agents	63
4.8	Practical Constraints in the Use of Biocontrol Agents	66
4.9	Biotechnological Advances for Improving Effectiveness of Biocontrol Agents	68
4.10	Integrated Disease Management (IDM)	69
	Conclusion	70
	Exercise	71
5.	DISEASES CAUSED BY FUNGI	71
5.1	Introduction	73
5.2	Characteristics of Fungi	73
5.3	Structure of Fungi	73
5.4	Reproduction of Fungi	76
5.5	Evolution of Fungi	77
5.6	Classification of Fungi	79
5.7	Distinction Between Protista and Fungi	79
5.8	Taxonomic System of Fungi	83
5.9	Myxomycetes : True Plasmodial Slime Molds	84
5.10	Life Cycle of Myxomycetes	85
5.11	Straminipila	87
5.12	Diseases Caused by Oomycetes	93
5.13	Why Chytrids are Included in Fungi	95
5.14	Potato Wart Disease	104
5.15	Zygomycota	105
5.16	Entomophthorales	106
5.17	Zoopagales	112
5.18	Trichomycetes	112
5.19	Ascomycota	113
5.20	Diseases Caused by Ascomycetes	113
5.21	Early Blight of Potato	124
5.22	Basidiomycota	132
5.23	Diseases Caused by Basidiomycetes	133
5.24	Smut Disease	138
	Exercise	146
		154

6. DISEASES CAUSED BY BACTERIA	157
6.1 Introduction	157
6.2 Taxonomy	157
6.3 Structure	161
6.4 Reproduction in Bacteria	169
6.5 Recombination in Bacteria	172
6.6 Nutrition in Bacteria	176
6.7 Identification of Bacteria	180
6.8 Symptoms of Bacterial Disease	182
6.9 Important Diseases Caused by Bacteria	183
<i>Exercise</i>	199
7. DISEASES CAUSED BY VIRUSES	201
7.1 Introduction	201
7.2 General Characters	201
7.3 History of Virus	202
7.4 Size and Structure of Virus	203
7.5 Nucleic Acid	204
7.6 Capsid	204
7.7 Types of Structures of Virus	205
7.8 Structure of Bacteriophage	207
7.9 Viral Multiplication	208
7.10 Taxonomic Classification of Virus	211
7.11 Classification of Virus by Baltimore	212
7.12 Importance of Viruses	214
7.13 Symptoms Due to Viral Infections	214
7.14 Transmission of Plant Virus	217
7.15 Control of Plant Viruses	219
7.16 Various Viral Diseases Occurring on Various Hosts	220
<i>Exercise</i>	233
8. DISEASES CAUSED BY NEMATODES	235
8.1 Introduction	235
8.2 Life Cycle Stages	237
8.3 Classification of Plant-Parasitic Nematodes	238
8.4 Root-Knot Nematodes	238
8.5 Plant Cyst Nematodes	242
8.6 Root Lesion Nematodes	246
8.7 Management and Control	249
<i>Exercise</i>	255

9. POSTHARVEST DISEASES	257
9.1 Introduction	257
9.2 Causes of Postharvest Diseases	258
9.3 Development of Postharvest Diseases	260
9.4 Strategies for Postharvest Disease Control and Prevention	261
9.5 Antimicrobial Agents	262
9.6 Use of Botanicals	262
9.7 Plant Secondary Metabolites as Antimicrobial	265
9.8 Maintaining Suitable Environment to Prevent Host Infection	265
9.9 Heat and Ionising Radiation Treatments	266
9.10 Preharvest Treatments for Postharvest Disease Prevention	267
Conclusion	268
Exercise	269
10. ARBUSCULAR MYCORRHIZAL FUNGI IN HORTICULTURAL SYSTEMS	271
10.1 Introduction	271
10.2 AM Fungi in Biocontrol of Soil-borne Fungal Pathogens	272
10.3 Interaction of AM Fungi with Soil-borne Nematodes Associated with Horticultural Plants	275
10.4 Role of Rhizobacteria in Biocontrol	277
10.5 Strategies for Enhancing Biocontrol Efficacy	280
Exercise	281
11. LAB TECHNIQUES	283
11.1 Indicators	283
11.2 Stains	284
11.3 Culture Media	287
11.4 Xanthoproteic Test	299
11.5 Ninhydrin Test	300
11.6 Ehrlich's Test	300
11.7 Hopkins Cole Test	300
11.8 Million's Test	301
11.9 Isolation of DNA from Onion	301
11.10 Isolation of Yeast RNA	303
Glossary	305
Bibliography	345
Index	359

Linear Programming and Game Theory

Authors: Ritu Arora, Kavita Gupta

ISBN: 978-81-8487-725-0

Publication Year: 2022

Pages: 294

Binding: Paper Back

About the book

An undergraduate textbook written in lucid and simple language to familiarize the reader with the basic tools of optimization. A systematic presentation and comprehensive step by step explanation makes it easier for students to comprehend. Incorporated are a variety of illustrations and examples in each chapter. An elaborate selection of exercises has been provided. The book is beneficial for students of all the courses who intend to study 'Linear Programming and Theory of Games'. The book covers various methods of solving linear programming problems such as simplex, big-M, two phase, graphical, and duality methods. It also covers transportation, assignment, transshipment, travelling salesman and game theory problems along with their solution methodologies.

Key Features

Table of content

Introduction / Linear Programming – I / The Simplex Method And Artificial Variables / Duality / Transportation Problem / Assignment Problem / Game Theory.

Audience

Undergraduate Students, Teachers and Researchers

[Add to my shopping cart](#)



GROUP THEORY

"There are three concepts that permeate all of mathematics in varying degrees: linearity, continuity and symmetry. This book is all about symmetry and written in a style that is as pleasing to the mind as symmetry is to the eyes. I commend the book whole heartedly."

Prof. Dinesh Singh (Padma Shri)
Chancellor, K.R. Mangalam University
Formerly Vice Chancellor, University of Delhi

About the Book

Based on the classroom lectures, this textbook is primarily designed for the senior undergraduate/graduate students of Mathematics. The book covers the senior undergraduate mathematics course, meeting the curriculum requirements of most universities. Different concepts have been explained in a very lucid language with the help of solved examples that would help the students to understand the subject matter without further reference. The subject matter has been presented in a somewhat informal manner assuming the language and tone of a classroom lecture putting the readers at ease.

This book could be used for self-study as well as for a course text, and so full details of almost all proofs are included along with hundreds of solved problems, to give ample guidance in understanding abstract notions. The solved problems are interspersed throughout the text at places where they naturally arise, making the book ideal for self-study. The proofs are precise and complete, backed up by chapter end problems, with just the right level of difficulty.

A common thread runs through the entire book, tying each chapter to the next - the unifying thread being the treatment of the concept of symmetry of objects that do indeed satisfy the definition of a group.

Contents

1. Group 2. Finite Groups and Subgroups 3. Cyclic Groups 4. Permutation Groups 5. Cosets and Lagrange's Theorem 6. Normal Subgroups and Factor Groups 7. Group Homomorphism and Isomorphism 8. Automorphisms 9. Direct Products 10. Group Actions 11. Sylow Theorems

About the Authors

Dr. Dinesh Khattar, an erstwhile Principal (2015 to 2018) is currently a Professor at the Department of Mathematics, Kirori Mal College, University of Delhi. He topped (Gold Medalist) both in his B.Sc and M.Sc exams of Delhi University. He received Dr. S. Radhakrishnan Memorial National Teacher's Award 2015 for his contribution in the field of education. He was also awarded the prestigious Commonwealth Scholarship for pursuing research in UK. He is actively involved in research and has presented papers in prestigious international conferences across the globe. Dr. Khattar has been a member of curriculum development committee for B.Sc. and M.Sc. programs at various universities including the University of Delhi. He is also an author of many books on Mathematics.

Dr. Neha Agrawal, completed her education from Kirori Mal College, University of Delhi and pursued her M.Phil. and Ph.D. from University of Delhi. Her areas of interest are Nonlinear Dynamical Systems and Chaos Theory. She is working as an Assistant Professor at the Department of Mathematics, Kirori Mal College since 2012 and has also taught in other prestigious colleges like Miranda House, Daulat Ram and NSIT. She has a rich teaching experience of over 12 years. She has published several research papers in reputed international journals.

GROUP THEORY

GROUP THEORY



DINESH KHATTAR
NEHA AGRAWAL



Ane Books Pvt. Ltd.

4821, Parwana Bhawan, 24, Ansari Road,
Daryaganj, New Delhi-110 002 India
Tel : +91-11-2327 6843-44 Fax : 2327 6863
E-mail : kapoor@anebooks.com

Visit us at : www.anebooks.com

₹ 1995.00



Ane Books
Pvt. Ltd.

DINESH KHATTAR
NEHA AGRAWAL

Contents

<i>Preface</i>	<i>vii</i>
<i>Foreword</i>	<i>ix</i>
<i>List of Symbols</i>	<i>xiii</i>
1. GROUP	1–58
1.1 Groups	4
1.2 Cayley Table.....	8
1.3 Elementary Properties of Groups.....	32
1.4 Dihedral Groups	49
2. FINITE GROUPS AND SUBGROUPS	59–98
2.1 Finite Groups	59
2.2 Subgroups	70
2.3 Subgroup Tests	71
2.4 Special Class of Subgroups.....	82
2.5 Intersection and Union of Subgroups	91
2.6 Product of Two Subgroups	93
3. CYCLIC GROUPS	99–118
3.1 Cyclic Groups and their Properties.....	99
3.2 Generators of a Cyclic Group	102
3.3 Subgroups of Cyclic Groups	104
4. PERMUTATION GROUPS	119–142
4.1 Permutation of a Set.....	119
4.2 Permutation Group of a Set	121
4.3 Cycle Notation.....	124
4.4 Theorems on Permutations and Cycles	126
4.5 Even and Odd Permutations.....	134
4.6 Alternating Group of Degree n	138
5. COSETS AND LAGRANGE'S THEOREM	143–168
5.1 Definition of Cosets and Properties of Cosets.....	143
5.2 Lagrange's Theorem and its Applications	148
5.3 Application of Cosets to Permutation Groups.....	164

6. NORMAL SUBGROUPS AND FACTOR GROUPS	
6.1 Normal Subgroup and Equivalent Conditions for a Subgroup to be Normal	
6.2 Factor Groups	
6.3 Commutator Subgroup of a Group and its Properties	
6.4 The G/Z Theorem	
6.5 Cauchy's Theorem for Abelian Group	
7. GROUP HOMOMORPHISM AND ISOMORPHISM	
7.1 Homomorphism of Groups and its Properties	
7.2 Properties of Subgroups under Homomorphism	
7.3 Isomorphism of Groups	
7.4 Some Theorems Based on Isomorphism of Groups	
8. AUTOMORPHISMS	22-24
8.1 Automorphism of a Group	22
8.2 Inner Automorphisms	23
8.3 Theorems Based on Automorphism of a Group	23
9. DIRECT PRODUCTS	241-271
9.1 External Direct Product	241
9.2 Properties of External Direct Products	244
9.3 $U(n)$ as External Direct Products	249
9.4 Internal Direct Products	251
9.5 Fundamental Theorem of Finite Abelian Groups	258
10. GROUP ACTIONS	271-302
10.1 Group Actions	271
10.2 Kernels, Orbits and Stabilizers	275
10.3 Group acting on themselves by Conjugation	291
10.4 Conjugacy in S_n	296
11. SYLOW THEOREMS	303-325
11.1 p -Groups and Sylow p -subgroups	303
11.2 Simple Groups	309
INDEX	327-329

RING THEORY

"One of the most interesting aspects of the book is the fact that the book recalls historical notes of the subject in a meaningful way to develop the interest of the students. The book is written in a very lucid style to explain the concepts of various notions in a very interesting manner which will be liked by the students as well as the teachers of this subject"

Prof. Satya Deo, F.N.A.Sc.

Honorary Scientist, Harish-Chandra Research Institute, Allahabad, India
Formerly Vice Chancellor, APS University, Rewa, and R.D. University, Jabalpur, (MP).

About the Book

This textbook has been designed for the UG/PG students of mathematics for all universities in India. It is primarily based on the classroom lectures, the authors gave at the University of Delhi. This book could be used both for self-study as well as course text. Full details of all proofs are included along with innumerable solved problems, interspersed throughout the text and at places where they naturally arise, to understand abstract notions. The proofs are precise and complete, backed up by chapter end problems, with just the right level of difficulty, without compromising the rigor of the subject.

The book starts with definition and examples of Rings and logically follows to cover Properties of Rings, Subrings, Fields, Characteristic of a Ring, Ideals, Integral Domains, Factor Rings, Prime Ideals, Maximal Ideals and Primary Ideals, Ring Homomorphisms and Isomorphisms, Polynomial Rings, Factorization of Polynomials and Divisibility in Integral Domains.

About the Authors

Dr. Dinesh Khattar, is currently Professor at the Department of Mathematics, Kirori Mal College, university of Delhi. He is also the former Principal (2015 to 2018) of the same college. He is a Gold medalist in both his B.Sc and M.Sc from Delhi university. He is also the recipient of Dr. S. Radhakrishnan Memorial National Teacher's Award 2015 for his contribution in the field of teaching. He was also awarded the Commonwealth scholarship for pursuing research in UK. He has been actively involved in research for over 3 decades and has presented papers in national and international conferences across the globe. Dr. Khattar has been a member of curriculum development committee for both undergraduate and graduate programs at various universities including the university of Delhi. He is also an author of many books on Mathematics including 'Group Theory' published by Ane Books.

Dr. Neha Agrawal, completed her education from Kirori Mal College, University of Delhi and pursued her M.Phil. and Ph.D. from University of Delhi. Her areas of interest are Nonlinear Dynamical Systems and Chaos Theory. She is working as an Assistant Professor at the Department of Mathematics, Kirori Mal College since 2012 and has also taught in other prestigious colleges like Miranda House, Daulat Ram and NSIT. She has published several research papers in reputed international journals. She is also the co-author of the book **Group Theory** published by Ane Books.



Ane Books Pvt. Ltd.

4821, Parwana Bhawan, 24, Ansari Road,
Daryaganj, New Delhi-110 002 India
Tel : +91-11-2327 6843-44 Fax : 2327 6863
E-mail : kapoor@anebooks.com

Visit us at : www.anebooks.com

₹ 1995.00



9 789390 165848 0

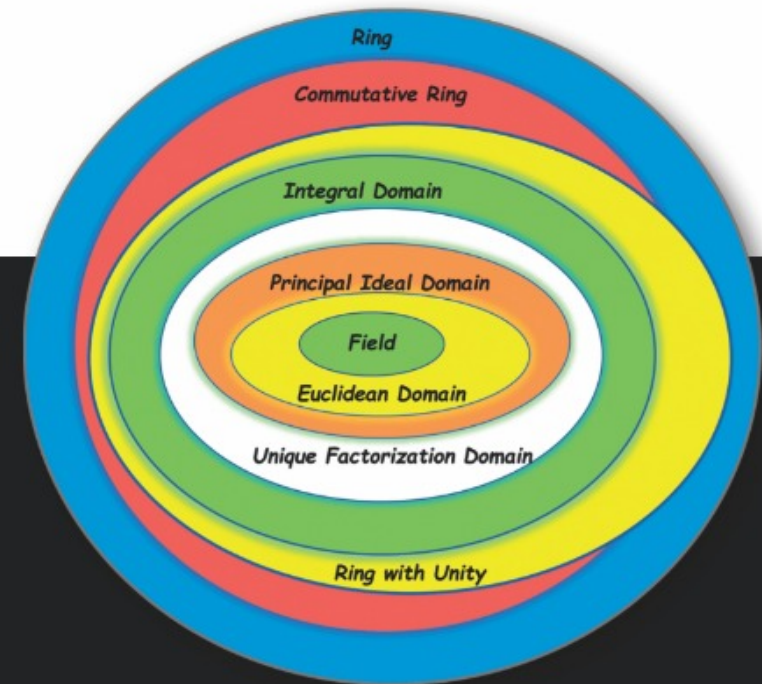


**Ane Books
Pvt. Ltd.**

DINESH KHATTAR
NEHA AGRAWAL

RING THEORY

RING THEORY



DINESH KHATTAR

NEHA AGRAWAL

Contents

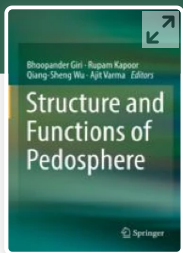
<i>Preface</i>	vii
<i>Foreword</i>	ix
<i>List of Symbols</i>	xiii
1. RINGS	1–43
1.1 Definition and Examples of Rings	5
1.2 Elementary Properties of Rings	15
1.3 Subrings	24
1.4 Algebra of Subrings	31
1.5 Idempotent and Nilpotent Elements.....	34
2. INTEGRAL DOMAINS AND FIELDS	45–78
2.1 Special Kinds of Rings.....	46
2.2 Some Theorems on Integral Domains and Fields.....	58
2.3 Characteristic of a Ring.....	68
3. IDEALS AND FACTOR RINGS	79–136
3.1 Ideals in a Ring	80
3.2 Intersection and Union of Ideals	90
3.3 Sum and Product of Two Ideals	92
3.4 Ideal Generated by a Subset.....	96
3.5 Simple Rings	105
3.6 Factor Rings	107
3.7 Types of Ideals	116
4. RING HOMOMORPHISMS AND ISOMORPHISMS	137–183
4.1 Ring Homomorphism	138
4.2 Properties of Ring Homomorphisms.....	144
4.3 Kernel of Ring Homomorphism	156
4.4 Applications of Natural Homomorphism.....	158
4.5 Isomorphism Theorems	160
4.6 The Field of Quotients of an Integral Domain	171
5. POLYNOMIAL RINGS	185–212
5.1 Ring of Polynomials.....	185

5.2	The Division Algorithm and its Consequences	18
5.3	Principal Ideal Domain.....	20
6.	FACTORIZATION OF POLYNOMIALS	213-24
6.1	Irreducible and Reducible Polynomials	213
6.2	Irreducibility Tests.....	214
6.3	Irreducible Polynomials, Maximal Ideals and Fields	225
7.	DIVISIBILITY IN INTEGRAL DOMAINS	245-29
7.1	Irreducible and Prime Elements.....	246
7.2	Unique Factorization Domains.....	261
7.3	Euclidean Domains.....	279
	APPENDIX ONE.....	291-292
	INDEX.....	293-294

Bhoopander Giri · Rupam Kapoor
Qiang-Sheng Wu · Ajit Varma *Editors*

Structure and Functions of Pedosphere

 Springer



Structure and Functions of Pedosphere pp 393–409

Mineralization of Soil Carbon, Nitrogen, and Phosphorus and Role of Nanofertilizers in Soil Fertility and Plant Growth

[Rajni Gupta](#)

Chapter | [First Online: 04 June 2022](#)

113 Accesses

Abstract

Soil functions as a vital living ecosystem that sustains plants, animals, and humans. Soil is not an inert medium, but it contains living organisms such as bacteria, fungi, and other microbes that are foundation of an elegant symbiotic ecosystem. The majority of plants live in close association with the diversity of soil microorganisms. They play an essential role in establishing symbiotic associations and thereby contributing to the growth of plant and indeed help in maintaining soil health. In the rhizosphere, a myriad of plant–microbe interactions occurs; therefore, the microorganisms that inhabit the rhizosphere are of great significance. Among a variety of soil microorganisms, the microbes such

management. *Agronomy* 8(12):279–285

Yaish MW, Al- Lawati A, Jana GA, Vishwas Patankar H, Glick BR (2016) Impact of soil salinity on the structure of the bacterial endophytic community identified from the roots of caliph medic (*Medicago truncatula*). *PLoS One* 11:e0159007.
<https://doi.org/10.1371/journal.pone.0159007>

Young IM, Crawford JW (2004) Interactions and self-organization in the soil-microbe complex. *Science* 304:1634–1637

Zhang F, Zou YN, Wu QS, Kuca K (2020) Arbuscular mycorrhizas modulate root polyamine metabolism to enhance drought tolerance of trifoliolate orange. *Environ Exp Bot* 171:103926.
<https://doi.org/10.1104/pp.110.157867>

Author information

Authors and Affiliations

Department of Botany, Kirori Mal College,

University of Delhi, New Delhi, Delhi, India

Rajni Gupta

Editor information

Editors and Affiliations

**Swami Shraddhanand College, University of
Delhi, Delhi, India**

Dr. Bhoopander Giri

**Department of Botany, University of Delhi,
Delhi, India**

Dr. Rupam Kapoor

**College of Horticulture & Gardening, Yangtze
University, Jingzhou, China**

Dr. Qiang-Sheng Wu

**Amity Institute of Microbial Sciences, Amity
University, Noida, Uttar Pradesh, India**

Dr. Ajit Varma

Rights and permissions

[Reprints and Permissions](#)

Copyright information

© 2022 The Author(s), under exclusive license to
Springer Nature Singapore Pte Ltd.

About this chapter

Cite this chapter

Gupta, R. (2022). Mineralization of Soil Carbon, Nitrogen, and Phosphorus and Role of Nanofertilizers in Soil Fertility and Plant Growth. In: Giri, B., Kapoor, R., Wu, QS., Varma, A. (eds) Structure and Functions of Pedosphere. Springer, Singapore. https://doi.org/10.1007/978-981-16-8770-9_16

[.RIS](#) [.ENW](#) [.BIB](#)

DOI

https://doi.org/10.1007/978-981-16-8770-9_16

Published

Publisher Name

Print ISBN

04 June 2022

Springer,

978-981-16-

Singapore

8769-3

Online ISBN
978-981-16-
8770-9

eBook Packages

[Earth and
Environmental
Science](#)
[Earth and
Environmental
Science \(R0\)](#)

Not logged in - 122.161.52.244

Not affiliated

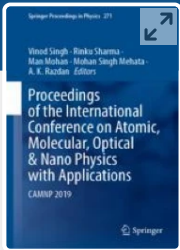
SPRINGER NATURE

© 2022 Springer Nature Switzerland AG. Part of [Springer Nature](#).

Vinod Singh · Rinku Sharma ·
Man Mohan · Mohan Singh Mehata ·
A. K. Razdan *Editors*

Proceedings of the International Conference on Atomic, Molecular, Optical & Nano Physics with Applications

CAMNP 2019



Proceedings of the International Conference on Atomic, Molecular, Optical & Nano Physics with Applications pp 85–104

Influence of Dense Plasma Environment on the He- α and He- β Transitions of Cl¹⁵⁺ Ion

[Dishu Dawra](#), [Mayank Dimri](#), [A. K. Singh](#), [Rakesh Kumar Pandey](#), [Alok K. S. Jha](#) & [Man Mohan](#)

Conference paper | [First Online: 15 March 2022](#)

223 Accesses

Part of the [Springer Proceedings in Physics](#) book series (SPPHY, volume 271)

Abstract

The effect of plasma shielding on the He- α $1s^2\ ^1S_0 \rightarrow 1s2p$ ($^3P_1^o, ^1P_1^o$) and He- β $1s^2\ ^1S_0 \rightarrow 1s3p$ ($^3P_1^o, ^1P_1^o$) transitions of Cl¹⁵⁺ ion embedded in warm-dense plasma environment is investigated. The analytical plasma screening potential of Li et al. [Phys. Plasmas 26, 033,301 (2019)] and uniform electron gas model potential have been incorporated within the multiconfiguration Dirac-Fock method and relativistic configuration interaction technique. It is seen that the excitation energies for the above transitions are red shifted with increasing free electron densities. At lower

This work was performed at Deen Dayal Upadhyaya College, University of Delhi, India under the research grant No. EMR/2016/001203. Dishu Dawra is thankful to the Department of Physics and Astrophysics for the University fellowship. Mayank Dimri gratefully acknowledges the financial assistance provided by SERB, the Department of Science and Technology, Govt. of India. Rakesh Kumar Pandey is thankful to the Department of Physics, Kirori Mal College for providing the computational facility.

Author information

Authors and Affiliations

**Department of Physics and Astrophysics,
University of Delhi, Delhi, 110007, India**

Dishu Dawra, Mayank Dimri, A. K. Singh & Man
Mohan

**Department of Physics, Deen Dayal Upadhyaya
College, University of Delhi, Delhi, 110078, India**

Mayank Dimri, A. K. Singh & Man Mohan

Department of Physics, Kirori Mal College,

University of Delhi, Delhi, 110007, India

Rakesh Kumar Pandey & Alok K. S. Jha

Editor information

Editors and Affiliations

**Department of Applied Physics, Delhi
Technological University, New Delhi, Delhi, India**

Dr. Vinod Singh

Department of Applied Physics, Delhi

Technological University, New Delhi, Delhi, India

Prof. Dr. Rinku Sharma

**Department of Physics, University of Delhi, New
Delhi, Delhi, India**

Prof. Dr. Man Mohan

Department of Applied Physics, Delhi

Technological University, New Delhi, Delhi, India

Dr. Mohan Singh Mehata

**Laser Science & Tech Centre (LASTEC), Defence
Research and Development Organization, New
Delhi, Delhi, India**

Dr. A. K. Razdan

Rights and permissions

[Reprints and Permissions](#)

Copyright information

© 2022 Springer Nature Singapore Pte Ltd.

About this paper

Cite this paper

Dawra, D., Dimri, M., Singh, A.K., Pandey, R.K., Jha, A.K.S.,
Mohan, M. (2022). Influence of Dense Plasma Environment
on the He- α and He- β Transitions of Cl¹⁵⁺ Ion. In: Singh,
V., Sharma, R., Mohan, M., Mehata, M.S., Razdan, A.K. (eds)
Proceedings of the International Conference on Atomic,
Molecular, Optical & Nano Physics with Applications.
Springer Proceedings in Physics, vol 271. Springer,
Singapore. https://doi.org/10.1007/978-981-16-7691-8_8

[.RIS](#) ↓ [.ENW](#) ↓ [.BIB](#) ↓

DOI

https://doi.org/10.1007/978-981-16-7691-8_8

Published	Publisher Name	Print ISBN
15 March 2022	Springer, Singapore	978-981-16- 7690-1

Online ISBN	eBook Packages
978-981-16- 7691-8	Physics and Astronomy. Physics and Astronomy_(R0).

Not logged in - 122.161.52.244

Not affiliated

SPRINGER NATURE

© 2022 Springer Nature Switzerland AG. Part of [Springer Nature](#).