Author's Profile

RADHA KRISHNAAN, is currently working as Assistant Professor, in the department of Electronics & Communication Engineering in Brilliant Grammar School Educational Society's Group of Institutions since10 Years. He previously associated with Avanthi Group of Institutions. He has over 13 Years of Teaching Experience. He is pursuing his PhD from Sri Satya Sai University of Technology & Medical Sciences, Sehore, Bhopal, Madhya Pradesh. He has completed his Bachelors Degree and Masters Degree from Avanthi Group of Institutions, JNTUH in 2009 & 2013 respectively. He has published international Scopus indexed papers and more than 10 national and international papers. He has attended many workshops related to Research Methodologies, EMBEDDED SYSTEMS & VLSI Design. He, as a student, awarded Gold Medal from ISM, Bangalore in a State Level Talent Test conducted in the year 2008. He, as a student, was the IEEE Member and he carried out many technical activities in his college as SECRETARY for IEEE Student branch.

Dr. E. RADHAMMA, currently working as Assistant Professor in the in the BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY , Abdullapurmet, Telangana, She completed her B.Tech in Electronics & Communication Engineering from Madras Institute of Technology, Chennai. She did her M.Tech in Digital Electronics & Communication Systems from JNTU College of Engineering, Hyderabad. She did her Ph.D. from OPJS University, Churu, in Wireless Communications. She has years of teaching experience in various reputed engineering colleges Across the state. She has published more than research papers in international journals and presented research papers in international/national conferences/seminars/symposiums. Having 20 years of experience in Academics, 12 Years of teaching experience for both B.Tech and M.Tech dealing various subjects like EDC, ECA, AE,AC, SC, CMC, LICA, DICA, LDICA, DE, STLD, MWE and etc., 7 Years of Experience of Head of Department at various Engineering Colleges across the State of Telangana.

M. VARASUNDAR is having more than 13 years of teaching Experience and currently serving as ASST PROFESSOR in the KASIREDDY NARAYANA REDDY COLLEGE OF ENGINEERING & RESERCH of E.C.E DEPT At Abdullapur Mettu, Telangana, and mentoring experience for Engineering graduates and he presented 4 papers in national journals. He completed His Mtech from JNTU University.

Dr. G. SAI KUMAR received Ph. D from V.B.S.PURVANCHAL UNIVERSIRY JAUNPUR He received M.Tech from VEC Shamshabad Hyderabad. He received B.Tech from MGIT Hyderabad. He published 20 papers in national and international journals. His area of interest is Communication systems, Digital Signal Processing, Image Processing and Microwave Engineering.

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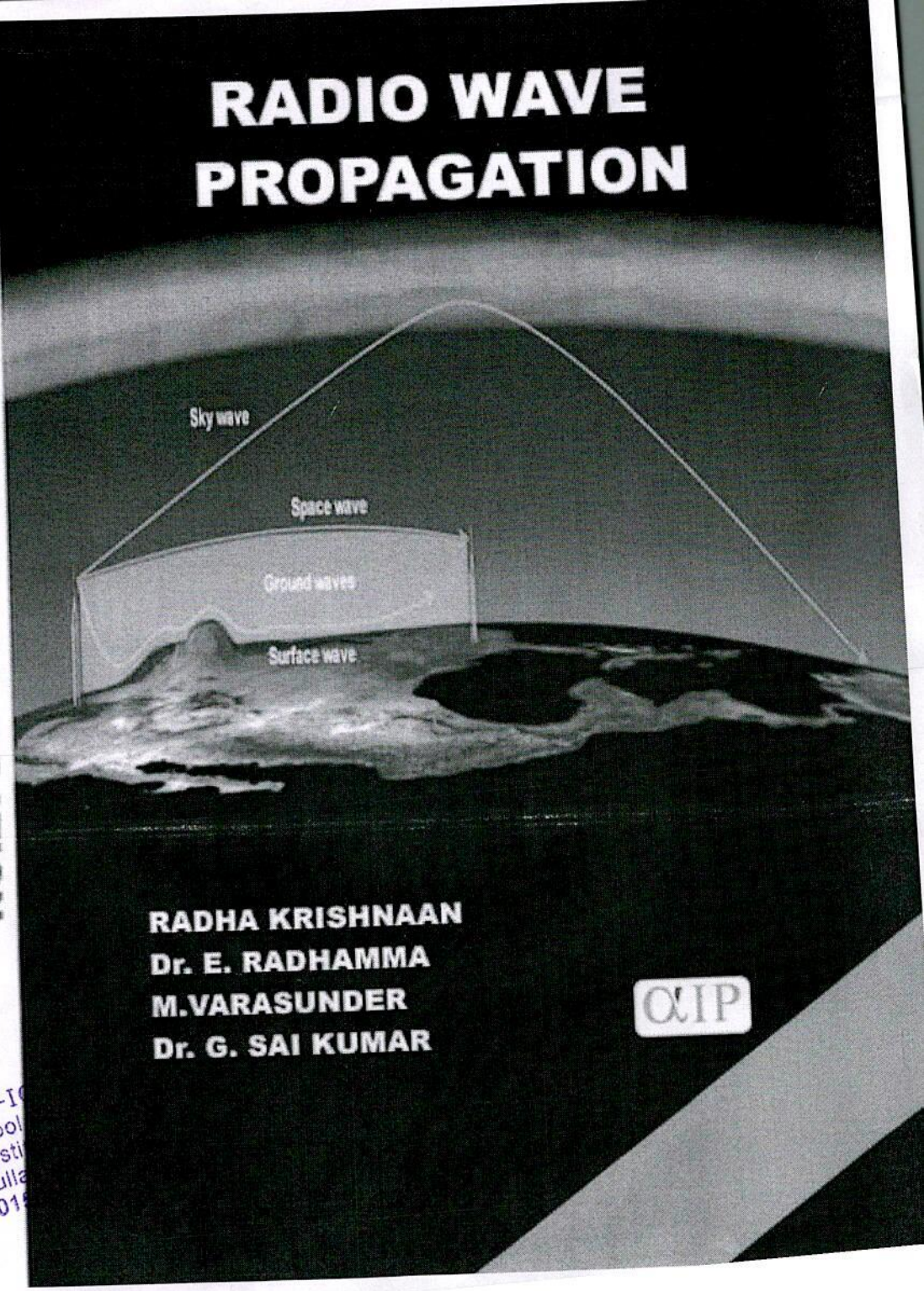

RADHA KRISHNAAN
Dr. E. RADHAMMA
M.VARASUNDER
Dr. G. SAI KUMAR

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FIRST EDITION

Authors

RADHA KRISHNAAN

Assistant Professor

Brilliant Grammar School Educational Society's Group of Institutions-Integrated Campus, Abdullapur (V), Abdullapurmet(M), RangareddyDistrict, Hyderabad, Telangana State- 501 505

Dr. E. RADHAMMA

Assistant Professor

Brilliant Institute of Engineering and Technology, Abdullapur (V), Abdullapurmet (M), Rangareddy District, Hyderabad, Telangana - 501 505.

Mr. M. VARASUNDER

Assistant Professor

Kasireddy Narayanreddy College of Engineering and Research, Abdullapur (V), Abdullapur (M), R.R. District, Hyderabad, Telangana- 501 505

Dr. G. SAIKUMAR

Professor

Siddhartha Institute of Engineering and Technology Ibrahimpatnam, Hyderabad

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DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

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Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (M),
R.R. Dist.-501505.

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We would also like to take the opportunity to express our specials thanks of gratitude to the publisher for providing a golden chance by giving us the most awaited platform to showcase our novel work.

Any attempt at any level can't be satisfactorily completed without our students' collaborative effort, resulting in our Book being unique.

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Preface

Antenna is an essential terminal device in all types of communication and radar systems. Without an antenna, there would be no communication. So, the study of antennas and their field patterns is an important aspect of understanding many applications of wireless transmission technology. Keeping such things in mind, the material in the book is organised into five parts.

Chapter 1 provides the fundamental concept of Electromagnetic (EM) wave radiation and basic terminology involved in antennas to describe radiation and input characteristics. The concept of dipoles and yagi-array are also clearly explained. Chapter 2 emphasis various antennas and antenna array concepts. Particularly in chapter 2, deals with aperture antennas and slot antennas with its application. Various feeding structures are also explained in later part of the chapter. Chapter 3 incorporates the concept of Antenna arrays along with antenna synthesis techniques. Chapter 4 devoted a special class of antennas designed especially for specific requirement. This chapter deals such antennas namely frequency independent antennas and modern antennas. The second part of the chapter deals with procedure and methods for measuring antenna parameters. Chapter 5 focused on the modes of propagation and the structure of atmosphere. This chapter extends to the effect of the earth and the troposphere on the propagation of electromagnetic waves is considered in detail. This is followed by an exposition of the nature of the ionosphere and its effect on sky wave propagation.

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Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TQ)
Abdullapur Art Area, Jeedimet (M),
R.R. Dist-Telangana.

SYLLABUS

UNIT I FUNDAMENTALS OF RADIATION

Definition of Antenna parameters – Gain, Directivity, Effective Aperture, Radiation Resistance, Band width, Beam width, Input Impedance. Matching – Baluns, Polarization Mismatch, Antenna Noise Temperature, Radiation from Oscillating Dipole, Half Wave Dipole. Folded Dipole, Yagi Array.

UNIT II APERTURE AND SLOT ANTENNAS

Radiation from Rectangular Apertures, Uniform and Tapered Aperture, Horn Antenna , Reflector Antenna, Aperture Blockage, Feeding Structures, Slot Antennas, Microstrip Antennas – Radiation Mechanism – Application, Numerical Tool for Antenna Analysis

UNIT III ANTENNA ARRAYS

N Element Linear Array, Pattern Multiplication, Broadside and End fire Array – Concept of Phased Arrays, Adaptive array, Basic principle of antenna Synthesis-Binomial array

UNIT IV SPECIAL ANTENNAS

Principle of Frequency Independent Antennas – Spiral Antenna, Helical antenna, Log Periodic. Modern Antennas - Reconfigurable Antenna, Active Antenna, Dielectric Antennas, Electronic Bandgap Structure and Applications, Antenna Measurements - Test Ranges, Measurement of Gain, Radiation Pattern, Polarization, VSWR.

UNIT V PROPAGATION OF RADIO WAVES ANTENNA AND WAVE PROPAGATION SYLLABUS

Modes of Propagation, Structure of Atmosphere, Ground wave Propagation, Tropospheric Propagation, Duct Propagation, Troposcatter Propagation, Flat earth and Curved earth concept Sky wave propagation – Virtual height, Critical Frequency, Maximum usable frequency – Skip Distance, Fading, Multi hop Propagation

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Table of Content

UNIT NO.	DESCRIPTION		PAGE NO.
1.	**FUNDAMENTALS OF RADIATION**		
	1.1	Introduction	1
	1.2	Directivity and Gain	5
	1.3	Effective Aperture	7
	1.4	Radiation Resistance	9
	1.5	Bandwidth	10
	1.6	Beam Width	11
	1.7	Input Impedance	13
	1.8	Baluns	13
	1.9	Polarization Mismatch	17
	1.10	Antenna Noise Temperature	20
	1.11	Radiation from Oscillating dipole	25
	1.12	Half-Wave Dipole	28
	1.13	Folded Dipole	30
	1.14	Yagi-Array	35
2.	**APERTURE AND SLOT ANTENNAS**		
	2.1	Radiation from Rectangular Aperture	43
	2.2	Uniform Aperture	45
	2.3	Tapered Aperture Field	47
	2.4	Horn Antenna	48
	2.5	Reflector Antenna	61
	2.6	Feeding Structure	66
	2.7	Slot Antenna	70
	2.8	Microstrip Antenna	80
	2.9	Numerical Tool for Antenna analysis	95

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R.R. Dist-501505.

UNIT NO.	DESCRIPTION	PAGE NO.
3.	**ANTENNA ARRAYS**	
3.1	Introduction	103
3.2	N Element Linear Array	104
3.3	Pattern Multiplication	110
3.4	Broad Side Array	112
3.5	End-fire Array	112
3.6	Concept of Phased Arrays	113
3.7	Adaptive Array	118
3.8	Binomial Array	122
3.9	Basic Principle of Antenna Synthesis	125
4.	**SPECIAL ANTENNAS**	
4.1	Principle of Frequency Independent Antenna	133
4.2	Frequency Independent Log-spiral Antenna	134
4.3	Helical Antenna	139
4.4	Log-Periodic Antennas	148
4.5	Reconfigurable Antennas	161
4.6	Active Antennas	164
4.7	Dielectric Antennas	166
4.8	Antenna Measurements	169
4.9	Antenna Ranges	171
4.10	Measurement of Gain	179
4.11	Measurement of Radiation pattern	185
4.12	Polarization Measurement	189
4.13	VSWR Measurement	195

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UNIT NO.	DESCRIPTION	PAGE NO.
5.	**PROPAGATION OF RADIO WAVES**	
5.1	Modes of Propagation	199
5.2	Structure of Atmosphere	202
5.3	Ground Wave Propagation	205
5.4	Tropospheric Propagation	207
5.5	Duct Propagation	211
5.6	Tropo-Scattering Propagation	216
5.7	Sky Wave Propagation	218
5.8	Virtual Height	223
5.9	Critical Frequency	226
5.10	Maximum Usable Frequency	228
5.11	Skip Distance	231
5.12	Fading	232
5.13	Multi-Hop Propagation	235
	REFERENCES	237

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of Institutions-Integrated Campus (7Q)
Abdullapurmet (M).
R.R. Dist-501 505.

Author's Profile

Mr. G. MADHU KUMAR, Assistant Professor, Department of Civil Engineering, he is having more than 4 years of teaching experience in Brilliant Grammar School Educational Society's Group of Institutions. He has obtained M.Tech. in Structural Engineering from JNTU Hyderabad and B.Tech. in Civil from JNTU Hyderabad.

Mr. N. SRAVAN currently working as Assistant Professor in KASIREDDY NARAYANREDDY COLLEGE OF ENGINEERING AND RESEARCH, Abdullapurmet, Telangana, he completed B.Tech from JNTUH and M.Tech from JNTUH affiliated College he has been serving more than 4 years for KASIREDDY NARAYANREDDY COLLEGE OF ENGINEERING AND RESEARCH. In his 4 years of experience he published 2 national articles in Journals. He has Guided Under Graduate Level and Post Graduate Level Students for their projects. In his tenure, he has successfully completed 10+ projects on various domains.

Mr. M. SATHISH REDDY currently working as Assistant Professor BRILLIANT INSTITUTE OF ENGINEERING & TECHNOLOGY, Abdullapurmet, Telangana,he completed B.Tech from JNTUH and M.Tech from JNTUH affiliated College. He has been serving more than 4 years for BRILLIANT INSTITUTE OF ENGINEERING & TECHNOLOGY .In his 4 years of experience she published 2 national articles in Journals. He has Guided Under Graduate Level and Post Graduate Level Students for their projects. In his tenure, he has successfully completed 10+ projects on various domains.

Dr. V. V. V. S. MURTHY has acquired his PhD from Indian Institute of Technology Kharagpur his Research includes Strength & Behavior of Light Gauge Steel and Composite Structures. He finished his Post Graduation in Structural Engineering from Regional Institute of Technology, Jamshedpur and B.E degree in Civil Engineering from JNTU Kakinada. His area of Research includes Steel and composite structures. He has over twenty years of teaching experience in numerous reputed Institutions in and around Hyderabad. Currently, he's working as Professor at Siddhartha Institute of Engineering & Technology, Ibrahimpatnam, Ranga Reddy District, Telangana, India. He has acquired expertise in software associated with the modern technologies of civil engineering. He has delivered guest lectures to various institutions on Emerging subjects and current developments in Civil Engineering. He has published articles in Five Scopus Indexed journals, 12 UGC referred journals and One Web of science journal. He has dealt with numerous Projects and a few are under progress. He is a member of four professional bodies, viz. IEI, IRC, ISTAM and INVEST.

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Mr. G. MADHU KUMAR
Mr. N. SRAVAN
Mr. M. SATHISH REDDY
Dr. V. V. V. S. MURTHY

TRANSPORTATION ENGINEERING-THEORY PRACTICE AND MODELING

FIRST EDITION

Authors

Mr. G. MADHU KUMAR

Assistant Professor

Brilliant Grammar School Educational Society's Group of Institutions-Integrated Campus, Abdullapur (V), Abdullapurmet(M), RangareddyDistrict, Hyderabad, Telangana State- 501 505

Mr. N. SRAVAN

Assistant Professor

Kasireddy Narayanreddy College of Engineering and Research, Abdullapur (V), Abdullapur (M), R.R. District, Hyderabad, Telangana- 501 505.

Mr. M. SATHISH REDDY

Assistant Professor

Brilliant Institute of Engineering and Technology, Abdullapur (V), Abdullapurmet (M), Rangareddy District, Hyderabad, Telangana - 501 505.

Dr. V. V. V. S. MURTHY

Professor

Siddhartha Institute of Engineering and Technology Ibrahimpatnam, Hyderabad

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TG)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

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editor@sipinternationalpublishers.com

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (T
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

CONTENT

Unit	Name	Page No
I	**HIGHWAY ENGINEERING** • Introduction • Highway pavements • Geometrical design of highways • Traffic engineering • Sub grade soil • Road arboriculture and lighting	1-52
II	**HIGHWAY ENGINEERING** • Highway alignment and surveys • Road machineries • Low cost roads • Bituminous roads • Cement concrete roads • Hill roads	53-80
III	**RAILWAY ENGINEERING** • Introduction • Rails • Sleepers and ballast • Rail fastenings and plate laying • Maintenance of track	81-114
IV	**RAILWAY ENGINEERING** • Stations and yards • Station equipment • Points and crossings • Signaling • Interlocking • Rapid transport SYSTEM	115-146
V	**BRIDGE ENGINEERING** • Introduction • Foundations • Classification of bridges • Substructure • Superstructure • Bridge bearings • Test & revision	147-188

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Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

Author's Profile

MR. SEELAM JAYADEVA REDDY (PH.D), has qualified in Master of Business Administration from the prestigious Jawaharlal Nehru Technological University, Hyderabad, and also qualified in Master Programme in commerce Presently, he is Head of the Department of MBA, designated as Associate Professor at the Department of Master of Business Administration at Kasireddy Narayan Reddy College of Engineering and Research, affiliated to Jawaharlal Nehru Technological University, Hyderabad.. He is pursuing PhD from JJTU University-Rajasthan since-2016. He is actively involved in various institutional developmental activities from time to time and contributed significantly for the development of the institution. There are certain number of publications to his credit

Mrs. G. SRIVANI is having 9 years of teaching experience and currently working as Assistant Professor in Humanities and Sciences Department at Brilliant Grammar School Educational Society's Group of Institutions-Integrated Campus, Abdullapurmet, Telangana. She had worked formerly in Nova College of Engineering and Technology. She had completed Master's Degree in Business Administration from Osmania University affiliated college. She has presented various papers in conference and symposiums.

Mr. K. VENKATESWARA REDDY, he is a young, decent, dynamic Renowned Educationist and Eminent Academician has overall 12 years of teaching Experience and currently serving as HOD and ASSISTANT PROFESSOR in the BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY, Abdullapur (V), Abdullapurmet (M)), R.R Dist-501505 and mentoring experience for graduates. He has published more than 8 articles in various national and international journals and presented papers in national and international conferences too. Mr. K. VENKATESWARA REDDY is pursuing PhD from JJTU University - Rajasthan since-2016. He completed his MBA/ from JNTUH affiliated College and did his M.COM from Osmania University. He is consistently working in same college from past 12 Years He has Guided Post Graduate Level Students for their projects. In his tenure, he has successfully completed 95+ projects on various domains.

DR. D. ROSE MARY is having more than 10 years of teaching and research experience. She was UGC post doctoral fellow from Sri Krishnadevaraya University, Anantapur. She is awarded Doctor of Philosophy in the specialisation of Human Resource Management from Sri Krishnadevaraya University, Anantapur, and published more than 18 articles in reputed national and international journals. She also participated in several National and international conferences, workshops, seminars and Faculty Development Programs. Dr D. Rose Mary is currently serving as Professor in the Department of Management Studies, Sidhartha Institute of Engineering and Technology, Vinobha Nagar, Ibrahimpatnam, Telangana.

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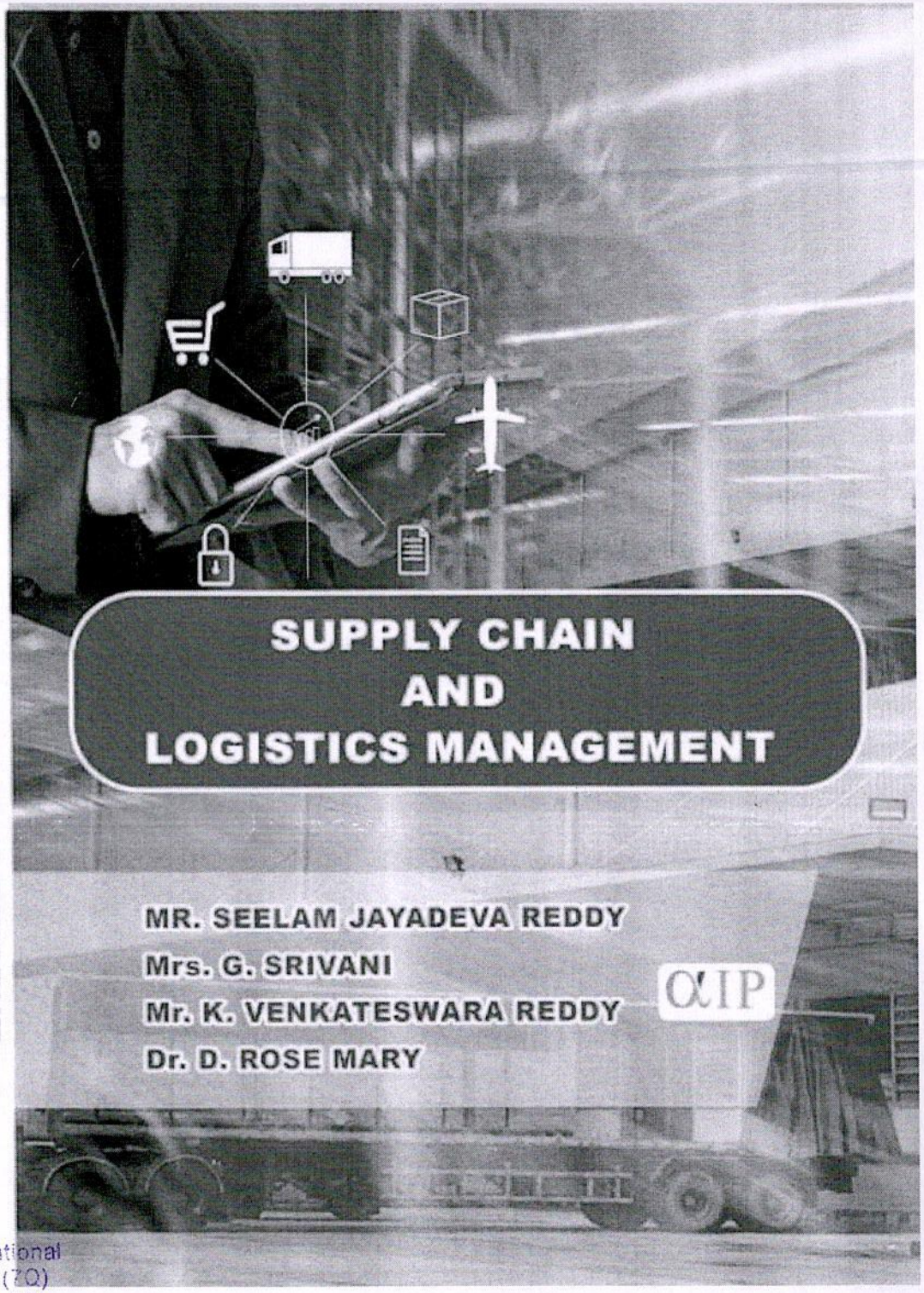

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MR. SEELAM JAYADEVA REDDY
Mrs. G. SRIVANI
Mr. K. VENKATESWARA REDDY
Dr. D. ROSE MARY

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DIRECTOR-IC
Brilliant Grammar School Educational
Society's Group of Institutions (IQ)
Abdullapur (V), Abdullapurmet (M),
R.R.Dist-501505.

SUPPLY CHAIN AND LOGISTICS MANAGEMENT

FIRST EDITION

Authors

Mr. SEELAM JAYADEVA REDDY
Assistant Professor
Kasireddy Narayanreddy College of Engineering and Research,
Abdullapur (V), Abdullapur (M), R.R. District,
Hyderabad, Telangana- 501 505.

Mrs. G SRIVANI
Assistant Professor
Brilliant Grammar School Educational Society's Group of Institutions-integrated Campus, Abdullapur (V), Abdullapurmet(M), RangareddyDistrict, Hyderabad, Telangana State- 501 505

Mr. K. VENKATESHWAR REDDY
Associate Professor
Brilliant Institute of Engineering and Technology,
Abdullapur (V), Abdullapurmet (M), Rangareddy District,
Hyderabad, Telangana - 501 505.

Dr. D.ROSE MARY
Professor
Siddhartha Institute of Engineering and Technology
Ibrahimpatnam, Hyderabad.

αIP

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7
Abdullapur (V), Abdullapurmet (M)
R.R. Dist.(T.S.)

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Brilliant Grammar School
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of Institutions-Integrated Campus (7
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-5

PREFACE

I feel encouraged by the widespread response from teachers and students alike to the first edition. I am presenting thoroughly revised and enlarged, to my readers in all humbleness. All possible efforts have been made to enhance further the usefulness of the book. The feedback received from different sources has been incorporated.

This book on **Supply Chain and Logistics Management** my ambition in life is to publish a book on **Supply Chain and Logistics Management**. This is a wonderful subject, but unfortunately remained an anathema for several courses. From my interaction with the students I could understand that the reason for fearing this subject is the difficultly in comprehending the subject matter. Further, the language used in the books on this subject is reported to be very complex. So the basic objective kept in mind while preparing this book was to present the subject matter in a very simple and lucid language. As part of simplification effort, throughout the text, a number of examples have been given to make the understanding easy.

The distinguishing feature of this book is that the subject matter has been introduced in a gradual manner and at the end of each chapter short answer type questions and essay type questions have been given in such a manner that the students can easily understand the subject matter in depth. This will be more useful to the students who aspire for competitive examinations. Moreover, to test the understanding of the students and to have sufficient practice, have also been given at the end of each chapter. I hope this book will be highly useful to the students of Commerce and Management.

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Brilliant Grammar School
Educational Society's Group
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Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

Considering the importance of the **Supply Chain and Logistics Management** most Universities have included "**Supply Chain and Logistics Management**" as one of the subjects in their Graduate Programmes such as B.Com. B.Com.(CA), M.Com.(CA), BBA., and MBA., (Management and Commerce).

This book provides strong conceptual framework for the study and understanding of the various aspects of **Supply Chain and Logistics Management**. I hope that the book would be useful to students, teachers and the Supply Chain and Logistics Management.

I register my profound sense of gratitude to the professors for their co-operation and encouragement in writing this book and also for familiarizing this book among the students.

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (70)
Abdullapur (V), Abdullapurmet (M),

SYLLABUS

CHAPTER – I

Introduction to Supply Chain Management (SCM): Concept of SCM – Components – Features – Strategic issues in SCM, The Supply Chain Revolution - Customer focus in SCM , Demand Planning, Purchase Planning – Make or Buy Decision – Indigenous and Global Sourcing, Development and Management of Suppliers – Legal Aspect of Buying – Cost Management- Negotiating for Purchasing and Sub Contracting – Purchase Insurance – Evaluation of Purchase Performance.

CHAPTER – II

Manufacturing Scheduling: Manufacturing Flow System – Work Flow Automation – Flexibility in Manufacturing to Achieve Dynamic Optimization, Material Handling System Design and Decision, Strategic Warehousing – Warehousing Operations – Warehousing Ownership Arrangements – Warehouse Decisions.

CHAPTER – III

Logistics: The Logistics of Business – The Logistical Value Proposition – The Work of Logistics – Logistical Operating Arrangements – Flexible Structure – Supply Chain Synchronisation, Transport Functionality, Principles and Participants – Transportation Service – Transportation Economics and Pricing – Transport Administration - Documentation.

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CHAPTER – IV

Information Technology and SCM: Information System Functionality – Comprehensive Information System Integration – Communication Technology – Rationale for ERP Implementation – ERP System Design – Supply Chain Information System Design – Enterprise Facility Network – Warehouse requirements – Total Cost Integration – Formulating Logistical Strategy.

CHAPTER – V

International Logistics and Supply Chain Management: Meaning and Objectives, Importance in Global Economy, Characteristics of Global Supply Chains,: Global Supply Chain Integration – Supply Chain Security – International Sourcing - Role of Government in Controlling International Trade and its Impact on Logistics and Supply Chain.

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CONTENTS

UNIT	CHAPTERS	P.No.
I	1.1 Introduction to Supply Chain Management (SCM)	1
	1.2 Components of Supply Chain Management	4
	1.3 Features of Supply Chain Management	9
	1.4 Strategic Issues in SCM	16
	1.5 The Supply Chain Revolution	20
	1.6 Customer Focus in SCM	21
	1.7 Demand Planning	22
	1.8 Purchase Planning	25
	1.9 Make or Buy Decision	27
	1.10 Indigenous and Global Sourcing	29
	1.11 Development and Management of Suppliers	30
	1.12 Legal Aspect of Buying	35
	1.13 Cost Management	37
	1.14 Negotiating for Purchasing and Sub Contracting	39
	1.15 Purchase Insurance	40
	1.16 Evaluation of Purchase Performance	41
	QUESTION	44
II	2.1 Manufacturing Scheduling	45
	2.2 Manufacturing Flow System	52
	2.3 Work Flow Automation	55
	2.4 Flexibility in Manufacturing to Achieve Dynamic Optimization	63
	2.5 Material Handling System Design and Decision	66
	2.6 Strategic Warehousing	71
	2.7 Warehousing Operations	79

DIRECTOR
Brilliant Grammar School
Educational Society's Group

	2.8 Warehousing Ownership Arrangements	82
	2.9 Warehouse Decisions	87
	QUESTION	90
III	3.1 Logistics	91
	3.2 The Logistics of Business	99
	3.3 The Logistical Value Proposition	110
	3.4 The Work of Logistics	112
	3.5 Logistical Operating Arrangements	114
	3.6 Flexible Structure	119
	3.7 Supply Chain Synchronisation, Transport Functionality, Principles and Participants	121
	3.8 Transportation Service	130
	3.9 Documentation	134
	QUESTION	137
IV	4.1 Information Technology and SCM	138
	4.2 Information System Functionality	155
	4.3 Comprehensive Information System Integration	159
	4.4 Communication Technology	160
	4.5 Rationale for ERP Implementation	168
	4.6 ERP System Design	172
	4.7 Supply Chain Information System Design	173
	4.8 Enterprise Facility Network	179
	4.9 Warehouse Requirements	180
	4.10 Total Cost Integration	182
	4.11 Formulating Logistical Strategy	184
	QUESTION	186

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Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501 505.

V	5.1 International Logistics and Supply Chain Management	187
	5.2 International SCM Definition:	188
	5.3 Meaning Logistics Management	191
	5.4 Nature and Scope of Logistics Management	193
	5.5 Objectives of Logistics Management	195
	5.6 Importance in Global Economy	207
	5.7 Global Supply Chain Integration	209
	5.8 Supply Chain Security	212
	5.9 International Sourcing	217
	5.10 Role of Government in Controlling International Trade	218
	5.11 Impact on Logistics and Supply Chain	221
	QUESTIONS	228

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Brilliant Grammar School
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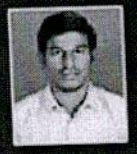
Abdullapur (V), Abdullapurmet (M),
R.R. Dist.

Author's Profile

THISIN. SYED received her B.TECH degree in CSE from The Vaxir Sultan College of Engineering, V. V. Palem, Khammam (Dt), in 2012, the M.TECH. Degree in CS from Swarna Bharathi Institute of Science and Technology Khammam in 2015, she is pursuing her Ph.D. from Saveetha University. And is having 7 years of teaching experience. She has published more than Three research articles in reputed International, National journals and presented papers in International, National Conferences and, She is a life member of CSI and IAENG.

Mrs. CHINNI HIMABINDHU is having more than 7 years of teaching Experience and currently serving as Assistant Professor in Computer Science & Engineering Department at Brilliant Grammar school Educational Society's Group of Institutions -IC, Abdullapurmet, Telangana. She completed M.Tech (CSE) from JNT University, Hyderabad.



Mr. G. SHEKAR (M.Tech), Assistant Professor, he has been Completed B.Tech in CSE from JNTU Hyderabad, and completed his M.Tech (CSE) in CSE from JNTU Hyderabad, he is working as Assistant Professor in CSE dept at Brilliant Institute of Engineering and Technology, Hyderabad, Telangana, India, having 09 years of experience. Creating new ideas to students and implementing on students. His areas of interest DBMS, JAVA, C++, etc.

Dr. CH. VENKATESWARA RAO has obtained his Ph.D. in Big data Analytics from VBSP University, UP and M.Tech degree in Computer Science &Engineering from VIT University, Vellor, Tamilnadu. His area of interest includes Big data Analytics, Data mining, Compiler Design. He has over 12 years of teaching experience in various reputed Institutions in Hyderabad, Telangana. Currently he is working as Associate Professor in Siddhartha Institute of Engineering and Technology, Hyderabad, Telangana. He has qualified GATE four times. He has one Scopus Indexed journal, five UGC journals and One Web of science journal. Two of his Patent proposals have been published in the Patent Journal and one Project proposal in the Sponsorship of MHRD are under progress.

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THISIN. SYED
Mrs. CHINNI HIMABINDHU
Mr. G. SHEKAR
Dr. CH. VENKATESWARA RAO

A CONCEPTUAL THEORY ON RELATIONAL DATABASE MANAGEMENT SYSTEM

FIRST EDITION

Authors

THISIN. SYED
Assistant Professor
Visvesvaraya College of Engineering & Technology
M.P. Patelguda, Bonguloor 'x' Roads,
Ibrahimpatnam Mandal, Ranga Reddy District-501510

Mrs. CHINNI HIMABINDHU
Assistant Professor
Brilliant Grammar School Educational Society's Group of Institutions-Integrated Campus, Abdullapur (V), Abdullapurmet(M), RangareddyDistrict, Hyderabad, Telangana State- 501 505

Mr. G. SHEKAR
Assistant Professor
Brilliant Institute of Engineering and Technology, Abdullapur (V), Abdullapurmet(M), Rangareddy District, Hyderabad, Telangana - 501 505.

Dr. CH. VENKATESWARA RAO
Associate Professor
Siddhartha Institute of Engineering and Technology
Ibrahimpatnam, Hyderabad

SIPH

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TC)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

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editor@sipinternationalpublishers.com

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TQ)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501 505.

PREFACE

This book is designed for use in courses on A Conceptual Theory on Relational Database Management System at the undergraduate/postgraduate level, particularly designed for the structured curriculum of Bachelor of Technology and Bachelor of Engineering – Computer science & Engineering

Although the contents of the book follows the essential content of complete concepts of A Conceptual Theory on Relational Database Management System is sufficiently broad in scope and rigorous in coverage to satisfy any undergraduate and postgraduate requirements in the field of IT/CSE.

The book is organized into five sections:

Chapter 1, describes about the database system and data modeling, characteristics & components of DBMS, functions of DBMS, evolution of Database models, types of data bases and data models, relational data model, table structure, keys, ER diagram & normalization, database administration etc.,

Chapter 2, covers the MySQL administration & database design, describes how working with MySQL, MySQL data types, data definition commands, data manipulation language, data control language, transaction control language, data query language, MySQL operators & built in functions etc.,

Chapter 3, delivers the MySQL performance tuning, indexes & sequences, joins & unions, views, user & transaction management, grant privileges etc.,

Chapter 4, covers the introduction to storage engines, types of storage engines, stored procedures & functions, trigger & cursor, MySQL optimization etc.,

Chapter 5, includes the data warehousing & introduction to big data, data warehousing, functions of data warehouse, applications of data warehouse, data mining concepts, introduction to big data, characteristics of big data, types of data stores in NoSQL etc.,

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R.R. Dist-501505.

The analyses and discussion, covering these five sections in the various chapters of this book, are based on the readings recommended for this course. However, wherever required, we have supplemented from other sources reference. A select bibliography is given at the end of the book for reference to the authors cited in the text

I hope this thoroughly book on A Conceptual Theory on Relational Database Management System will prove handy and useful to students and teachers on the same.

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Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus

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First and foremost, praises to God, the Almighty, for his immense shower of blessing and kindness throughout the work and has allowed us to finish successfully.

We are sincerely grateful to our Institution Management, Director, Principal, Faculties, Students, and all our family members for providing continuous support and motivation during the work.

We would also like to take the opportunity to express our specials thanks of gratitude to the publisher for providing a golden chance by giving us the most awaited platform to showcase our novel work.

Any attempt at any level can't be satisfactorily completed without our students' collaborative effort, resulting in our Book being unique

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TABLE OF CONTENTS

Chapter No.	Contents	Page No.
1	**DATABASE SYSTEMS AND DATA MODELING**	**01**
	1.1 Introduction	01
	1.1.1 Database Management System (DBMS)	02
	1.1.2 Features of DBMS	02
	1.1.3 Characteristics of Database	03
	1.1.4 Components of Database	04
	1.1.5 Functions of Database	05
	1.1.6 Applications of DBMS	09
	1.1.7 Database Models	10
	1.1.8 Evolution of Database models	10
	1.1.9 Types of Database Models	11
	1.2 Types of Databases	18
	1.3 Relational Data Model	24
	1.3.1 CODD's Rules	24
	1.3.2 Components of RDBMS	31
	1.3.3 Table Structure	31
	1.3.3.1 Record (or) Row (or) Tuple	31
	1.3.3.2 Attribute	32
	1.3.3.3 Domain	32
	1.3.3.4 Degree	32
	1.3.3.5 Cardinality	32
	1.3.3.6 Meta data	33
	1.3.3.7 Data dictionary	33
	1.3.3.8 Data Integrity	33
	1.3.4 Keys	33
	1.3.4 1 Primary key	33
	1.3.4.2 Composite key	34
	1.3.4.3 Unique key	35
	1.3.4.4 Foreign Key	36
	1.3.4.5 Super key	37
	1.3.4.6 Candidate key	37
	1.3.5 Data Constraints	37
	1.4 ER Diagram & Normalization	45
	1.4.1 ER Diagram	45

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TG)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

	1.4.2 Normalization	54
	1.5 Database Administration	61
	1.5.1 Client Server technology	64
	1.5.2 Distributed System	66
	1.5.3 DBA Tasks	67
	1.5.4 DBA Tools and Utilities	67
	1.5.5 Database Maintenance	68
	1.5.6 Backup and Recovery Backup	69
2	**MySQL ADMINISTRATION & DATABASE DESIGN**	**73**
	2.1 Introduction to MySQL	73
	2.1.1 Features of MySQL	73
	2.1.2 How to install MySQL	74
	2.2 Introduction to working with MySQL Databases	87
	2.3 Introduction to MySQL	98
	2.3.1 MySQL Data Types	99
	2.3.2 Data Definition Commands	103
	2.3.3 Data Manipulation Commands	105
	2.3.4 Data Control Language	107
	2.3.5 Transaction Control Language	107
	2.3.6 Data Query Language	108
	2.3.7 MySQL Operators	109
	2.4 Built-in Functions	113
	2.4.1 Single row functions	113
	2.4.2 Group or Aggregate Function	122
	2.4.3 Conversion functions	128
	2.5 Querying the table	129
	2.5.1 WHERE Clause	129
	2.5.2 ORDER BY clause	130
	2.5.3 GROUP BY clause	131
	2.5.4 HAVING clause	132
	2.6 Flow control IF ()	133
3	**MYSQL PERFORMANCE TUNING**	**139**
	3.1 Introduction	139
	3.2 Indexes & Sequences	139
	3.2.1 Indexes	139

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TG)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

	3.2.2 Types of Indexes	142
	3.2.3 Sequences	146
	3.3 Performing multiple table retreval using Joins & Unions	150
	3.3.1 Joins	150
	3.2.2 Types of Join	151
	3.3.2 Unions	162
	3.4 Views	167
	3.5 User & Transaction Management	173
	3.5.1 User Management	173
	3.5.2 Grant Privileges	176
	3.5.3 Transaction Management	181
4	**STORAGE ENGINES, STORED PROGRAM CONCEPT, OPTIMIZATION & API'S**	**187**
	4.1 Introduction to Storage Engines	187
	4.1.1 Types of Storage engines	187
	4.2 MySQL Stored Procedures & Functions	191
	4.2.1 MySQL stored function	195
	4.3 MySQL trigger & Cursor	197
	4.3.1 MySQL trigger	197
	4.3.2 Cursor	202
	4.4 MySQL Optimizations	208
	4.5 MySQL and web	210
	4.5.1 Need for own MySQL programs	210
	4.5.2 MySQL's Application Programming Interfaces	212
5	**DATA WAREHOUSING & INTRODUCTION TO BIG DATA**	**215**
	5.1 Data Warehousing	215
	5.1.1 Functions of Data Warehouse	215
	5.1.2 Data Warehouse Architecture	216
	5.1.3 Applications of Data warehouse	219
	5.1.4 Data mining concepts	220
	5.1.5 Advantages of Data Mining	222
	5.2 Big Data	222
	5.2.1 Characteristics of Big Data The four Vs of Big Data	223

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Brilliant Grammar School
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of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501 505.

5.2.2 Technologies in Big Data 224
5.2.3 Applications 224
5.2.4 Overview of NoSQL 227
5.2.5 Difference between RDBMS and NoSQL 227
5.2.6 Tools used in Big Data 229
5.2.7 Scalability 230
5.2.8 Understanding Storage Structure 231
5.3 Types of Data stores in NoSQL 234
5.3.1 Column Store NoSQL Database 235
5.3.2 Document Store NoSQL Database 236
5.3.3 Key-value store NoSQL database 236
5.3.4 Graph based NoSQL database 237
5.3.5 CRUD Operations 237
5.3.6 Querying NoSQL Stores 241
5.3.7 NoSQL in cloud 243
5.3.8 Amazon SimpleDB 245

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Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdulkalanmet (M),
R.R. Dist-501505.

Author's Profile

Dr. N. LINGA REDDY, currently working as Assistant Professor in BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY, Abdullapurmet, Telangana, He received his doctoral degree in computer science engineering from HIMALAYA University Arunachal Pradesh in Oct 2021. He received his master and bachelor degree in CSE from JNT University, Hyderabad. He has served in academic sectors form 12+ years. He as published research papers in various reputed peer reviewed journals.

Mrs. CH. SANGEETHA is having 6 years of teaching Experience and currently serving as Assistant Professor in Computer Science and Engineering Department at the Kasireddy Narayanreddy College of Engineering and Research, Abdullapurmet, Telangana, and mentoring experience for B.Tech graduates. She has published 1 paper in national journal. She completed her Masters from JNTUH. She gave her services to 1 affiliated colleges of Jawaharlal Nehru Technical University before joining in the team of Kasireddy Narayanreddy College of Engineering and Research.

Mrs. B. DURGABHAVANI is having 7 years of teaching Experience and currently serving as Assistant Professor in Computer Science & Engineering Department at Brilliant Grammar school Educational Society's Group of Institutions-IC, Abdullapurmet, Telangana. She completed M.Tech (CSE) from JNT University, Hyderabad.

Dr. S. KRISHNA MOHAN RAO has received his PhD in Computer Science and Engineering from Osmania University. He is working as Professor and IQAC coordinator in Siddhartha Institute of Engineering and Technology. He has industry and teaching experience. Served as Principal for Gandhi Institute of Technology in Bhuvaneshwar and also for Siddhartha Institute of Engineering and Technology. To his credit has published more than 50 papers in both national and International. He is life member for ISTE, IETE and CSI. He has also reviewer for many national and international journals.

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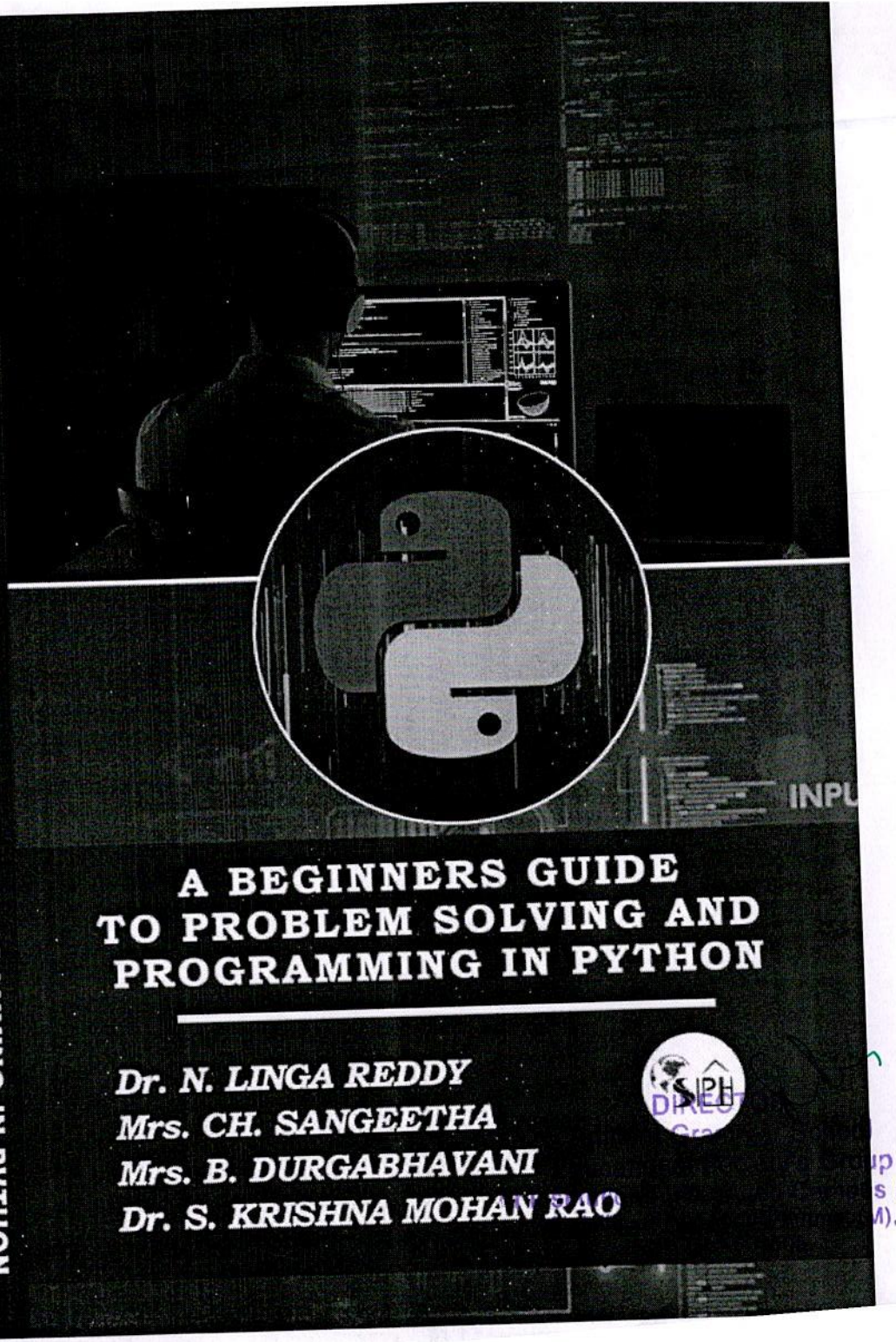

A BEGINNERS GUIDE TO PROBLEM SOLVING AND PROGRAMMING IN PYTHON

Dr. N. LINGA REDDY
Mrs. CH. SANGEETHA
Mrs. B. DURGABHAVANI
Dr. S. KRISHNA MOHAN RAO

A BEGINNERS GUIDE TO PROBLEM SOLVING AND PROGRAMMING IN PYTHON

FIRST EDITION

Authors

Dr. N. LINGA REDDY

Assistant Professor
Brilliant Institute of Engineering and Technology,
Abdullapur (V), Abdullapurmet (M), Rangareddy District,
Hyderabad, Telangana - 501 505.

Mrs. CH. SANGEETHA

Assistant Professor
Kasireddy Narayanreddy College of Engineering and Research,
Abdullapur (V), Abdullapur (M), R.R. District,
Hyderabad, Telangana- 501 505.

Mrs. B. DURGABHAVANI

Assistant Professor
Brilliant Grammar School Educational Society's Group of
Institutions-Integrated Compus, Abdullapur (V),
Abdullapurmet(M), RangareddyDistrict, Hyderabad,
Telangana State- 501 505

Dr. S. KRISHNA MOHAN RAO

Professor
Siddhartha Institute of Engineering and Technology
Ibrahimpatnam, Hyderabad

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7C)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

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editor@sipinternationalpublishers.com

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TQ)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

PREFACE

This book is designed for use in courses on A beginners Guide to problem solving and programming in Python at the undergraduate/postgraduate level, particularly designed for the structured curriculum of Bachelor of Technology and Bachelor of Engineering – Computer science & Engineering

Although the contents of the book follows the essential content of complete concepts of A beginners Guide to problem solving and programming in Python is sufficiently broad in scope and rigorous in coverage to satisfy any undergraduate and postgraduate requirements in the field of IT/CSE.

The book is organized into five sections:

Chapter 1, describes about the computational strategies, Problem solving techniques, notations of an algorithm ie., Pseudocode, Flowchart, basics of python programming which covers the variables, identifiers, arithmetic operator, values & type, python statement, operator, operator precedence, expressions & statements, functions etc.,

Chapter 2, covers the data types in python, list, characteristics, string, python dictionary, modules, packages, libraries etc.,

Chapter 3, delivers the file handling & exception handling, data files in python, file operation, file methods & python exception handling etc.,

Chapter 4, covers about the python modules, listing of modules, variables in a modules, modules loading & execution, frameworks in python etc.,

Chapter 5, includes the object oriented programming in python, OOPS concept, class, inheritance, polymorphism, encapsulation, overriding methods, constructor and abstraction in python, along with some illustration programs etc.,

The analyses and discussion, covering these five sections in the various chapters of this book, are based on the readings recommended for this course. However, wherever required, we have supplemented from other sources reference. A select bibliography is given at the end of the book for reference to the authors cited in the text

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TQ)
Abdullapurmet (M),
R.R. Dist-501505.

I hope this thoroughly book on A beginners Guide to problem solving and programming in Python will prove handy and useful to students and teachers on the same.

DIRECTOR
Brilli... School
Edu... Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

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Any attempt at any level can't be satisfactorily completed without our students' collaborative effort, resulting in our Book being unique

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

TABLE OF CONTENTS

Chapter No.	Contents	Page No.
1	**BASICS OF PYTHON**	**01**
	1.1 Introduction	01
	1.2 Problem Solving Techniques	02
	1.3 Notations of an algorithm	07
	1.3.1 Pseudocode	07
	1.3.2 Flowchart	09
	1.3.3 Limits of problem solving	11
	1.4 Beginning with python programming	12
	1.5 Python Interpreter and Interactive Mode	14
	1.6 Python Variables and Identifiers	16
	1.7 Values and Type	18
	1.8 Operators	20
	1.8.1 Arithmetic Operators	20
	1.8.2 Relational Operators	24
	1.8.3 Bitwise Operators	28
	1.8.4 Assignment Operators	29
	1.8.5 Bitwise AND and Assignment Operator	35
	1.8.6 Identity Operators	38
	1.8.7 Membership Operators	39
	1.9 Operator precedence	39
	1.10 Expressions and Statements	41
	1.15 Conditionals	41
	1.11.1 If Statement	42
	1.11.2 If Else Statement	42

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TG)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

	1.11.3 elif Statements	43
	1.11.4 Nested if-else Statements	44
	1.12 Loop Structures	44
	1.12.1 While Loop	45
	1.12.2 For in Loop	46
	1.12.3 Iterating by Index of Sequence	47
	1.12.4 Else statement with for loops	47
	1.13 Loop Control Statements	49
	1.13.1 Continue Statement	49
	1.13.2 Break Statement	49
	1.13.3 Pass Statement	50
	1.14 Functions	50
	1.14.1 Types of function	50
	1.14.2 Arguments of a Function	51
	1.14.3 Types of Arguments	52
	1.14.4 Keyword arguments	52
	1.14.5 Variable Length arguments	53
	1.14.6 Docstring	53
	1.14.7 Return Statement	54
	1.14.8 Python function within functions	56
	1.15 Scope of Variables	57
	1.15.1 Scope Rules in Functions	58
	1.16 Recursion Function	62
	Sample Problems	68
2	**DATA TYPES IN PYTHON**	**75**
	2.1 Introduction	75
	2.2 Python List	77
	2.2.1 Characteristics of Lists	78

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Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (70)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

2.2.2 List Indexing and Splitting	79
2.2.3 An updating List Values	81
2.2.4 Python List Operations	82
2.2.5 Delete List Elements	82
2.3 Python Tuple	83
2.3.1 Accessing value in tuple	83
2.3.2 Updating Tuples	83
2.3.3 Deleting Tuples	84
2.3.4 Basic Tuples Operation	84
2.4 Pythons set	86
2.4.1 Unordered Set	86
2.4.2 Set Items in data type	87
2.4.3 The Set Constructor	88
2.5 Strings in Python	88
2.5.1 Creating a String	89
2.5.2 Strings indexing and splitting	89
2.5.3 Reassigning Strings	92
2.5.4 Deleting and Updating the String	92
2.5.5 Deleting the String	92
2.6 Python Dictionary	94
2.6.1 Creating the dictionary	94
2.6.2 Adding elements to a dictionary	96
2.6.3 Deleting elements using del keyword	97
2.7 Python Modules	99
2.7.1 Renaming a Module	100
2.7.2 Using dir () function	101
2.8 Packages in Python	101
2.9 Libraries in Python	107
2.10 Python Standard Libraries	108

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Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7C)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

2.11 Use of Libraries in Python Program 109

3 FILE HANDLING AND EXCEPTION HANDLING 113

3.1 Python File Handling 113
3.2 Data Files in Python 113
3.3 File Operation 114
3.3.1 To Opening a File 114
3.3.2 Close () Method 116
3.3.3 Reading File 117
3.3.4 Writing File 123
3.4 Python File Methods 124
3.5 Python Exception Handling 125
3.6 Exceptions 126
3.7 Types of Exception Handling 127
3.7.1 Try and Except Statement 127
3.7.2 Catching Statement Exception 128
3.7.3 Finally Keyword in Python 130
3.8 Declaring Multiple Exceptions 134
3.9 Random Methods 140
3.10 File Handling Functions 142

4 INTRODUCTION TO PYTHON MODULES 149

4.1 Introduction 149
4.2 Mechanism of Python Modules 150
4.3 Listing of Modules 150
4.4 Variable in a Module 151
4.5 Module Loading and Execution 152

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501506.

4.6 Python Libraries for data processing and Modeling 154
4.7 Python Standard Library 155
4.8 List of Python Libraries 156
4.8.1 TensorFlow 156
4.8.2 Scikit-Learn 158
4.8.3 Numpy 159
4.8.4 Keras 159
4.8.5 PyTorch 160
4.8.6 Pandas 162
4.8.7 Matplotib 162
4.8.8 Ploty 163
4.8.9 SciPy 163
4.8.10 Seaborn 163
4.8.11 Ggplot 164
4.9 Frameworks in Python 164
4.10 List Of Frameworks 167
4.10.1 Django 168
4.10.2 Flask 169
4.10.3 Bottle 170
4.10.4 CherryPy 171
4.10.5 Alohttp 172
4.10.6 Dash 172
4.10.7 Falcon 173
4.10.8 Giotto 174
4.10.9 Growler 174
4.10.10 Uvloop 175
4.10.11 Sanic 176
4.10.12 MorePath 176
4.10.13 PicNic 177

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Abdullapur (V), Abdullapurmet (M),
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	4.10.14 Pylons	177
	4.10.15 Pyramid	178
	4.10.16 Turbogears	178
	4.10.17 Web2py	179
	4.10.18 Hug	180
	4.10.19 Cubic Web	181
5	**OBJECT ORIENTED PROGRAMMING IN PYTHON**	**183**
	5.1 Introduction	183
	5.2 OOP Concept	183
	5.3 Class and its Methods	184
	5.4 Inheritance	194
	5.5 Encapsulation	203
	5.6 Polymorphism	208
	5.7 Python Constructor	213
	5.9 Abstraction in Python	220
	ILLUSTRATION PROGRAMS	231

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Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TO)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

Author's Profile

Mr. V VENKANNA, Assistant Professor, Department of Electronics and Communication Engineering, he is having more than 6 years of teaching experience in Brilliant Grammar School Educational Society's Group of Institutions. He has obtained M.Tech. in VLSI system Design from JNTU Hyderabad and B.Tech. in ECE from JNTU Hyderabad. He has published 6 International, National journals.

Mr. M.VINOD KUMAR, M.Tech (Electronics and Communication Engineering), is the Head of the Department of Electronics and Communication Engineering and Associate Professor with 10+ years of experience. He has been serving more than 6 years for BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY. He has done post graduation from Jawaharlal Nehru Technological University, Hyderabad. In his 10 years of experience he published 2 national articles in Journals. He has successfully conducted 4 Refresher Courses / Workshops and has attended many Faculty Development Programs. He has Guided Under Graduate Level and Post Graduate Level Students for their projects. In his tenure, he has successfully completed 60+ projects on various domains. His areas of interests include Electronic Devices And Circuits, Analog and Digital Communications, Digital System Design, Optical Communications, Mobile Communications and Networks, Satellite Communications, Microwave Engineering, Microprocessors and Microcontrollers, Embedded Systems, VLSI Design, Linear Integrated Circuits And Applications, etc...

Mr. RAVICHANDAR. L working as Assistant professor in Kasireddy Narayan reddy college of engineering and research. He has more than 3 years of teaching experience, received his B.Tech degree in Electronics and Communication Engineering in 2006 from JNTU University, Hyderabad. He completed his M.Tech in ES in 2010 from affiliated college of JNTU. He guided more than 12 B.Tech projects and M.tech projects. He participated in 8 faculty development programs and 5 workshops. He is good event and tour planner. He published one paper in national journals

Dr. RAMESH BABU N is working as Associate Professor in Department of Electronics and Communication Department in Siddhartha Institute of Engineering & Technology, Ibrahimpatnam, with an overall teaching experience of 6 years. Completed Ph.D. in the area of Wireless communication, from Sun Rise University, Rajasthan. Completed her Master's degree with specialization in Electronics and mobile communications from University of Glamorgan U.K and B.Tech form JNTU Hyderabad in the year 2008. Published 7+ papers in National and International journals and published papers in international conferences, 1 Scopus Journal. I had filed 1 patent. I attended and also conducted many workshops and conferences. I am the members in IETE, MISTE, IRED, IAENG

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Mr. V VENKANNA
Mr. M.VINOD KUMAR
Mr. RAVICHANDAR. L
Dr. RAMESH BABU N

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Authors

Mr. V. VENKANNA

Assistant Professor

Brilliant Grammar School Educational Society's Group of Institutions-Integrated Campus, Abdullapur (V), Abdullapurmet(M), RangareddyDistrict, Hyderabad, Telangana State- 501 505

Mr. M. VINOD KUMAR

Assistant Professor

Brilliant Institute of Engineering and Technology, Abdullapur (V), Abdullapurmet (M), Rangareddy District, Hyderabad, Telangana - 501 505.

Mr. L. RAVICHANDER

Assistant Professor

Kasireddy Narayanreddy College of Engineering and Research, Abdullapur (V), Abdullapur (M), R.R. District, Hyderabad, Telangana- 501 505

Dr. N. RAMESH BABU

Professor

Siddhartha Institute of Engineering and Technology Ibrahimpatnam, Hyderabad

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)

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R.R. Dist-501505.

Content

1 Introductory Concepts 1

1.1 Introduction 1

1.1.1 Evolution of Mobile Radio Communications 1

1.1.2 Present Day Mobile Communication 3

1.2 Fundamental Techniques 4

1.2.1 Radio Transmission Techniques 5

1.3 How a Mobile Call is Actually Made? 6

1.3.1 Cellular Concept 7

1.3.2 Operational Channels 7

1.3.3 Making a Call 7

1.4 Future Trends 9

1.5 References 10

2 Modern Wireless Communication Systems 11

2.1b1G: First Generation Networks 11

2.2 2G: Second Generation Networks 11

TDMA/FDD Standards 12

CDMA/FDD Standard 12

2.5GMobileNetworks 12

2.3 3G: Third Generation Networks 12

2.3.1 3G Standards and Access Technologies 13

2.3.2 3GW-CDMA(UMTS) 14

2.3.3 3GCDMA2000 16

2.3.4 3GTD-SCDMA 17

2.4 Wireless Transmission Protocols 18

2.4.1 Wireless Local Loop (WLL) and LMDS 18

2.4.2 Bluetooth 18

2.4.3 Wireless Local Area Networks(W-LAN) 19

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Abdullapur (V), Abdullapurmet (M),
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2.4.4 WiMax 20
2.4.5 Zig bee 20
2.4.6 Wibree 20
2.5 Conclusion: Beyond3GNetworks 21
2.6 References 22

3 The Cellular Engineering Fundamentals 23

3.1 Introduction 23
3.2 What is a Cell? 23
3.3 Frequency Reuse 24
3.4 Channel Assignment Strategies 26
3.4.1 Fixed Channel Assignment(FCA) 26
3.4.2 Dynamic Channel Assignment(DCA) 27
3.5 Handoff Process 28
3.5.1 Factors Influencing Handoffs 29
3.5.2 Handoffs In Different Generations 31
3.5.3 Handoff Priority 31
3.5.4 A Few Practical Problems in Handoff Scenario 31
3.6Interference & System Capacity 33
3.6.1 Co-channel interference(CCI) 33
3.6.2 Adjacent Channel Interference(ACI) 36
3.7 Enhancing Capacity And Cell Coverage 37
3.7.1 The Key Trade-off 37
3.7.2 Cell-Splitting 39
3.7.3 Sectoring 42
3.7.4 Microcell Zone Concept 44
3.8 Trunked Radio System 46
3.9 References 51

4 Free Space Radio Wave Propagation 52

4.1 Introduction 52
4.2 Free Space Propagation Model 53

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of Institutions-Integrated Campus (70)
Abdullapur (V), Abdullapurmet (M)
R.R. Dist-501505.

4.3 Basic Methods of Propagation....55
4.3.1 Reflection....55
4.3.2 Diffraction....56
4.3.3 Scattering....56
4.4 Two Ray Reflection Model....57
4.5 Diffraction....62
4.5.1 Knife-Edge Diffraction Geometry....63
4.5.2 Fresnel Zones: the Concept of Diffraction Loss....65
4.5.3Knife-edgediffractionmodel....68
4.6 Link Budget Analysis....68
4.6.1 Log-distance Path Loss Model....68
4.6.2 Log Normal Shadowing....69
4.7 Outdoor Propagation Models....70
4.7.1 Okumura Model....70
4.7.2 Hata Model....71
4.8 Indoor Propagation Models....72
4.8.1 Partition Losses Inside a Floor(Intra-floor)....72
4.9 Partition Losses Between Floors (Inter-floor)....72
4.10 Log-distance Path Loss Model....72
Summary....73
References....74

5 Multipath Wave Propagation and Fading 75

5.1 Multipath Propagation....75
5.2 Multipath &Small-Scale Fading....75
5.2.1 Fading....75
5.2.2 Multipath Fading Effects....75
5.2.3 Factors Influencing Fading....76
5.3 Types of Small-Scale Fading....76
5.3.1 Fading Effects due to Multipath Time Delay Spread....76
5.3.2 Fading Effects due to Doppler Spread....77

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Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M).
R.R. Dist-501505.

5.3.3 Doppler Shift....78
5.3.4 Impulse Response Model of a Multipath Channel 80
5.3.5 Relation Between Bandwidth and Received Power.... 82
5.3.6 Linear Time Varying Channels(LTV) 84
5.3.7 Small-Scale Multipath Measurements.... 86
5.4 Multipath Channel Parameters 88
5.4.1 Time Dispersion Parameters.... 88
5.4.2 Frequency Dispersion Parameters 90
5.5 Statistical models formultipath propagation 91
5.5.1 NLoS Propagation: Rayleigh Fading Model 92
5.5.2 LoS Propagation: Rician Fading Model 95
5.5.3 Generalized Model: Nakagami Distribution.... 96
5.5.4 Second Order Statistics.... 97
5.6 Simulation of Rayleigh Fading Models.... 96
5.6.1 Clarke's Model: without Doppler Effect.... 99
5.6.2 Clarke and Gans' Model: with Doppler Effect 99
5.6.3 Rayleigh Simulator with Wide Range of Channel Conditions 100
5.6.4 Two-Ray Rayleigh Faded Model 100
5.6.5 Saleh and Valenzuela Indoor Statistical Model 100
5.6.6 SIRCIM/SMRCIM Indoor/Outdoor Statistical Models 101
Conclusion.... 101
References 102
6 Transmitter and Receiver Techniques 103
6.1 Introduction.... 101
6.2 Modulation.... 101
6.2.1 Choice of Modulation Scheme 103
6.2.2 Advantages of Modulation 104
6.2.3 Linear and Non-linear Modulation Techniques 104
6.2.4 Amplitude and Angle Modulation 105
6.2.5 Analog and Digital Modulation Techniques.... 106

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Brilliant Grammar School
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of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

6.3 Signal Space Representation of Digitally Modulated Signals 106
6.4 Linear Modulation Techniques 106
6.4.1 Amplitude Modulation (DSBSC) 106
6.4.2 BPSK 109
6.4.3 QPSK 109
6.4.4 Offset-QPSK 111
6.4.5 π/4DQPSK 111
6.5 Line Coding 112
6.6 Pulse Shaping 114
6.6.1 Nyquist pulse shaping 114
6.6.2 Raised Cosine Roll-Off Filtering 115
6.6.3 Realization of Pulse Shaping Filters 116
6.7 Nonlinear Modulation Techniques 116
6.7.1 Angle Modulation (FMandPM) 117
6.7.2 BFSK 118
6.8 GMSK Scheme 120
6.9 GMSK Generator 121
6.10 Two Practical Issues of Concern 123
6.10.1 InterChannel Interference 123
6.10.2 Power Amplifier Non linearity 123
6. 11 Receiver performance in multipath channels 124
6.11. 1 Bit Error Rate and Symbol Error Rate 125
6.12 Example of a Multicarrier Modulation: OFDM 126
6.12.1 Orthogonality of Signals 127
6.12.2 Mathematical Description of OFDM 127
6.13 Conclusion 130
6.14 References 131

7 Techniques to Mitigate Fading Effects 132

7.1 Introduction 132
7.2 Equalization 133

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505

7.2.1 A Mathematical Frame work....134
7.2.2 Zero Forcing Equalization....135
7.2.3 A Generic Adaptive Equalizer....138
7.2.4 Choice of Algorithms for Adaptive Equalization....138
7.3 Diversity....140
7.3.1 Different Types of Diversity....141
7.4 Channel Coding....147
7.4.1 Shannon's Channel Capacity Theorem....147
7.4.2 Block Codes....148
7.4.3 Convolutional Codes....157
7.4.4 Concatenated Codes....157
7.5 Conclusion....160
7.5.1 References....161

8 Multiple Access Techniques 162

8.1 Multiple Access Techniques for Wireless Communication....162
8.1.1 Narrowband Systems....163
8.1.2 Wideband Systems....163
8.2 Frequency Division Multiple Access....164
8.2.1 FDMA/FDD in AMPS....164
8.2.2 FDMA/TDDinCT2....164
8.2.3 FDMA and Near-Far Problem....165
8.3 Time Division Multiple Access....165
8.3.1. TDMA/FDD in GSM....166
8.3.2 TDMA/TDD in DECT....166
8.4 Spread Spectrum Multiple Access....167
8.4.1 Frequency Hopped Multiple Access (FHMA)....167
8.4.2 Code Division Multiple Access....167
8.4.3 CDMA and Self-interference Problem....168
8.4.4 CDMA and Near- Far Problem....169
8.4.5 Hybrid Spread Spectrum Techniques....169

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Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur(M), Abdullapurmet (M),
R.R. Dist-501505

8.5 Space Division Multiple Access 170
8.6 Conclusion 166
8.7 References 167

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Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

Author's Profile

Mr. K. BHEEMA is having more than 15 years of teaching Experience and currently serving as Assistant Professor in Electrical & Electronics Engineering Department at Kasireddy Narayanreddy College of Engineering and Research, Abdullapurmet, Telangana. He completed MTech from JNT University Hyderabad affiliated College. Mr. K. BHEEMA gave his services to PRRM Engineering College before joining in the team of Kasireddy Narayanreddy College of Engineering and Research.

Mr. LAVUDYA NADAM received the B.Tech degree in electrical & electronics engineering from Jawaharlal Nehru Technological University, Hyderabad, India, in 2007 and the M.Tech. (P.E) degree from Jawaharlal Nehru Technological University, Hyderabad, India, in 2010. Since September 2018, he has been pursuing the Ph.D. degree at Osmania University, Hyderabad, India. From July 2015 to till the date, he was working as a Assistant Professor in electrical & electronics engineering. His interests are in Electrical Circuits & Networks, and power electronics , distributed generation, renewable energy systems & Microgrid its applications.

Mr. D. RAMESH is having more than 13 years of teaching Experience and currently serving as Associate Professor in Electrical & Electronics Engineering Department at Brilliant Grammar School Educational Society's Group of Educational Institutions-IC, Abdullapurmet, Telangana. He completed M.Tech from JNTU college of Engineering (A) Anantapur subsequently (Then Affiliated to JNTUA Anantapur). Mr.D. RAMESH gave his services to Nova College Of Engineering And Technology before joining in the team of Brilliant Grammar School Educational Society's Group Of Educational Institutions-IC. He has 2 years of Industrial experience at Bhagyanagar Electricals Limited, Kukatpally, Hyderabad. He has guided more than 50 Projects under UG and PG level. He is been an editorial board member in various Journals and reviewed various articles. He has published more than Seventeen research presented papers in International, journals, National Conferences. His journey is embellished with responsibilities and awards which are the shining examples of his commitment and caliber. His teaching career is replete with handling several important responsibilities. He has greatly contributed for the roles of officer in charge of examination branch, head of the department, electrical.

Dr. A. SATEESH KUMAR has obtained his PhD Degree in Jodhpur National University, Jodhpur. M.Tech degree in Power Electronics from JNTU Hyderabad, Telangana and B Tech degree in JNTU Hyderabad, Telangana. His area of Research Includes Power Distribution Systems Study& Power Quality Improvement Using FACTS Devises in Distribution systems. He has over 13 years of teaching experience in various reputed Institutions in Telangana. Currently he is working as Professor in Siddhartha Institute of Engineering and Technology, Ibrahimpatnam, Telangana.

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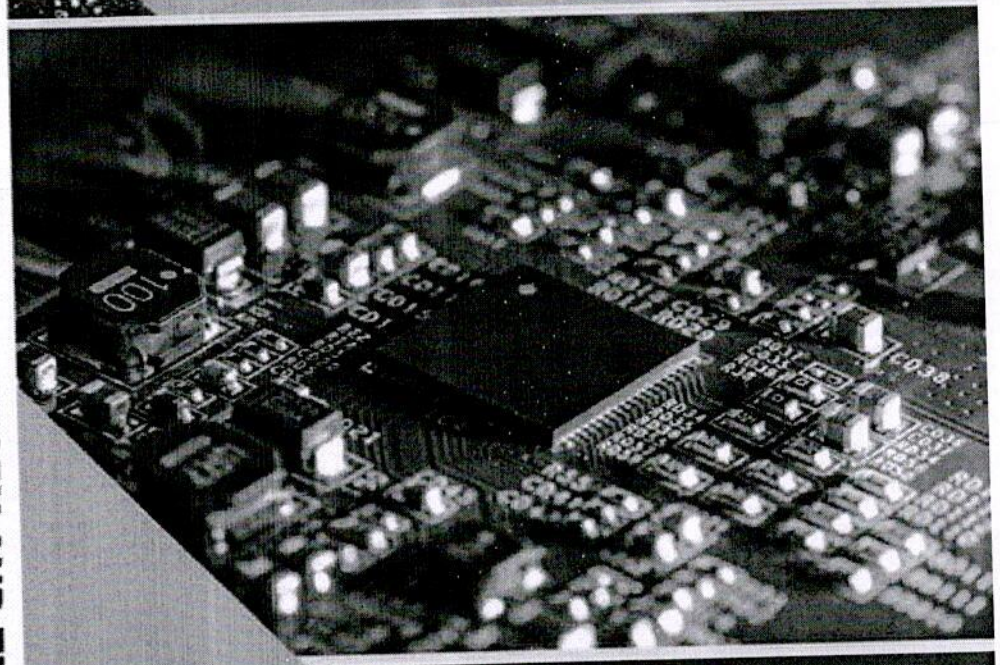

Mr. K. BHEEMA
Mr. LAVUDYA NADAM
Mr. D. RAMESH
Dr. A. SATEESH KUMAR

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ELECTRICAL CIRCUIT THEORY AND TECHNOLOGY

FIRST EDITION

Authors

Mr. K. BHEEMA
Assistant Professor
Kasireddy Narayanreddy College of Engineering and Research,
Abdullapur (V), Abdullapur (M), R.R. District,
Hyderabad, Telangana- 501 505

Mr. LAVUDYA NADAM
Assistant Professor
Brilliant Institute of Engineering and Technology,
Abdullapur (V), Abdullapurmet (M), Rangareddy District,
Hyderabad, Telangana - 501 505

Mr. D. RAMESH
Associate Professor
Brilliant Grammar School Educational Society's Group of
Institutions-Integrated Campus, Abdullapur (V),
Abdullapurmet(M), RangareddyDistrict, Hyderabad,
Telangana State- 501 505

Dr. A. SATEESH KUMAR ADEPU
Professor
Siddhartha Institute of Engineering and Technology
Ibrahimpatnam, Hyderabad

αIP

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

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Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TG)
Abdullapurmet (M),
R.R. Dist-501 505.

SYLLABUS

UNIT –I (A) ELECTROSTATICS (B) D C CIRCUITS

(a) ELECTROSTATICS

Electric Flux-Electric Flux Density-electric Field Intensity-electric potential-Coulomb's laws of electrostaticsconcept of capacitance - Relationship between Voltage, Charge and capacitance – energy stored in a capacitor – capacitors in series and in parallel –Problems in above topics.

(b) D C CIRCUITS

Basic concepts of current, emf, potential difference, resistivity, temperature coefficient of resistance – Ohm's Law –application of Ohm's law – work, power energy – relationship between electrical, mechanical and thermal units – resistance – series circuits – parallel and Series parallel circuits – Kirchhoff's laws –Problems in the above topics.

UNIT-II CIRCUIT THEOREMS

Mesh equations – Nodal equations – star/delta transformations –Superposition theorem – Thevenin's theorem – Norton's theorem – Maximum power transfer theorem. (Problems in DC circuits only)

UNIT-III SINGLE PHASE CIRCUITS

'j' notations – rectangular and polar coordinates – Sinusoidal voltage and current – instantaneous, peak, average and effective values – form factor and peak factor(derivation for sine wave) – pure resistive, inductive and capacitive circuits – RL, RC, RLC series circuits – impedance –phase angle – phasor diagram – power and power factor – power triangle – apparent power, active and reactive power – parallel circuits (two branches only) - Conductance, susceptance and admittance –problems on all above topics.

UNIT-IV RESONANT CIRCUITS

Series resonance – parallel resonance (R,L &C; RL&C only) – quality factor – dynamic resistance – comparison of series and parallel resonance –Problems in the above topics - Applications of resonant circuits.

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TG)
Abdullapurmet (V), Abdullapurmet (M),
R.R. Dist-501505.

UNIT-V THREE PHASE CIRCUITS

Three phase systems-phase sequence –necessity of three phase system–concept of balanced and unbalanced load - balanced star &delta connected loads – relation between line and phase voltages and currents –phasor diagram –three phase power and power factor measurement by single wattmeter and two wattmeter methods –Problems in all above topics.

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

Author's Profile

Mr. D. MADAVA REDDY is having more than 13 years of teaching Experience and currently serving as Associate Professor in MECHANICAL Engineering Department at the Kasireddy Narayana Reddy College of Engineering and Research, Abdullapurmet, Telangana, and mentoring experience for B.Tech graduates. He has published 13 papers in national journals. He completed his Masters from National institute of technology, Allahabad. He gave his services to 2 affiliated colleges of Jawaharlal Nehru Technical University before joining in the team of Kasireddy Narayanreddy College of Engineering and Research. He worked at Applied computer services limited and Quantum age tech Solutions for more than 2Years.

Mr. ALAKUNTLA YADAIAH, Assistant Professor, Department of MECHANICAL ENGINEERING, he is having more than 7 years of teaching experience in Brilliant Grammar School Educational Society's Group of Institutions. He has obtained M.Tech. In THERMAL ENGINEERING from JNTU Hyderabad and B.Tech. In MECHANICALENGINEERING from JNTU Hyderabad. He has published 4 International, National journals.

Mr. D. MOHAN currently is working as ASSISTANT PROFESSOR in MECHANICAL ENGINEERING at BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY, Abdullapur (V), Abdullapurmet (M), R.R Dist-501505 Telangana. He completed M.Tech from JNTUH affiliated College and serving more than 6 years for BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY, gave his services to one affiliated colleges of Jawaharlal Nehru Technological University before joining in the team of BRIL. In his 7 years of experience has Guided 20+ Under Graduate Level Students for their projects on various domains.

Dr. ESHWAR PRASAD has done B.Tech., M.Tech., PhD in Mechanical Engineering. He has a vast experience of more than 35 years experience in Teaching field. He served for JNTUH University. He has published more than 45 papers in international journals and international conferences and more than 33 publications in national journals and conference. He has Number of Session Chair, Keynote Speaker, Invited, Guest Lecture etc: 30 Number of Conferences/ Workshop/ Seminars Attended/ Presented:20 Professional Memberships: FIE, MISTE, IIPE, IPENZ

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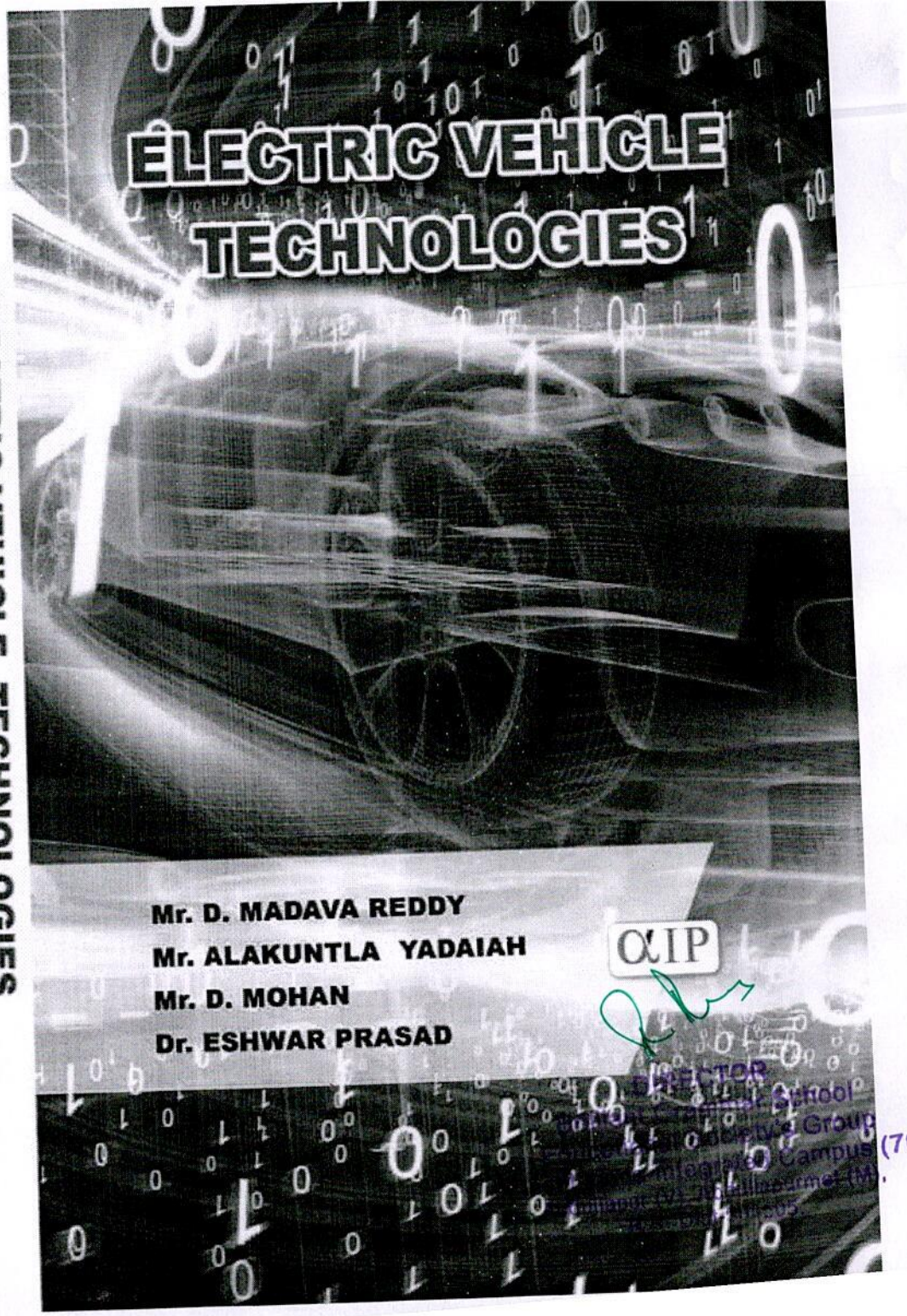

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ELECTRIC VEHICLE TECHNOLOGIES

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Authors

Mr. D. MADHAVA REDDY

Associate Professor

Kasireddy Narayanreddy College of Engineering and Research, Abdullapur (V), Abdullapur (M), R.R. District, Hyderabad, Telangana- 501 505

Mr. ALAKUNTLA YADAIAH

Assistant Professor

Brilliant Grammar School Educational Society's Group of Institutions-integrated Campus, Abdullapur (V), Abdullapurmet(M), RangareddyDistrict, Hyderabad, Telangana State- 501 505

Mr. D. MOHAN

Assistant Professor

Brilliant Institute of Engineering and Technology, Abdullapur (V), Abdullapurmet (M), Rangareddy District, Hyderabad, Telangana - 501 505.

Dr. ESHWARA PRASAD

Professor

Siddhartha Institute of Engineering and Technology

Ibrahimpatnam, Hyderabad

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DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
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R.R. Dist-501505.

TABLE OF CONTENT		
S.NO	**TITLE**	**PAGE.NO**
UNIT : I INTRODUCTION TO ELECTRIC VEHICLES		
I	1.1 INTRODUCTION:	1
	1.2 ELECTRIC VEHICLES:	4
	1.3CONFIGURATIONS OF ELECTRIC VEHICLES:	4
	1.4PERFORMANCE OF ELECTRIC VEHICLES:	9
	1.5 BATTERY-POWERED CAR EFFICIENCY:	9
	1.6 SPECIFICS OF A TRACTION MOTOR:	9
	1.7TRACTIVE EFFORT AND TRANSMISSION REQUIREMENT	11
	1.9TRACTIVE EFFORT IN NORMAL DRIVING	14
	1.10 ENERGY CONSUMPTION	15
	1.11 HYBRID ELECTRIC VEHICLES	15
	1.12 CONCEPT OF HYBRID ELECTRIC DRIVE TRAINS	16
	1.13ARCHITECTURES OF HYBRID ELECTRIC DRIVE TRAINS	20
	1.14CONTINUOUSLY VARIABLE TRANSMISSIONS FOR ELECTRIC AND	21

DIRECTOR
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	HYBRID VEHICLES	
	1.15 THERE ARE MANY BENEFITS OF USING A SERIES HYBRID DRIVE TRAIN	23
	1.16 TO BE SURE, THERE ARE DRAWBACKS TO SERIES HYBRID ELECTRIC DRIVE TRAINS	24
	1.17 PARALLEL HYBRID ELECTRIC DRIVE TRAINS	24
	1.18TORQUE-COUPLING PARALLEL HYBRID ELECTRIC DRIVE TRAINS	25
	1.19 PARALLEL HYBRID ELECTRIC DRIVE TRAINS WITH HIGH-VELOCITY COUPLING:	28
	1.20 MODES OF OPERATION THAT CAN BE MET INCLUDE THE FOLLOWING	30
	1.21 BATTERY CHARGING FROM THE ENGINE	31
UNIT : II ENERGY STORAGE		
II	2.1 INTRODUCTION	33
	2.2 ELECTRICAL RECHARGING	34
	2.3 OVERVIEW OF BATTERIES	35

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (M), R.R. Dist-501505.

	2.4 BATTERY PARAMETERS	36
	2.5 BATTERY TEMPERATURE, HEATING, AND COOLING NEEDS	39
	2.6 BATTERY LIFE AND NUMBER OF DEEP CYCLES	39
	2.7 TYPES OF BATTERIES	39
	2.8 PRIMARY BATTERIES	40
	2.9 HARACTERISTICS OF COMMONLY SED RECHARGEABLE	44
	2.10 TYPES AND CHARACTERISTICS OF SECONDARY BATTERIES	45
	2.11 FEATURES OF ULTRACAPACITORS	52
	2.12HYBRIDIZATION OF ENERGY STORAGES	52
	2.13 HYBRIDISED ENERGY STORAGE IS MADE UP OF TWO DISTINCT TYPES OF ENERGY STORAGE	53
	2.14 DIFFICULTIES IN BATTERY PACK DESIGN	54
	2.15 THE BMS WILL COLLECT NUMEROUS SENSOR READINGS	55

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Brilliant Grammar School
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Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

	2.16 INCREASING THE DURABILITY OF BATTERIES	55
	2.17INTERVENTION IN THERMAL CONDITIONS	56
	2.18 CIRCUIT PROTECTION CHALLENGES	57
	2.19INTERNATIONAL SYSTEM FOR CHARGING MOTOR VEHICLES	58
	2.20 DETAILS OF BMS AND RESULT OF FAILURE	59
	2.21 FUEL CELLS	60
	2.22OPERATING PRINCIPLES OF FUEL CELLS	61
	2.23FUEL CELL SYSTEM CHARACTERISTICS	63
	2.24 TECHNOLOGIES FOR FUEL CELLS	65
	2.25 POLYMER ELECTROLYTE MEMBRANE FUEL CELLS	65
	2.26 DIRECT-METHANOL FUEL CELLS	66
	2.27 ALKALINE FUEL CELLS	66
	2.28 PHOSPHORIC ACID FUEL CELLS	67

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

	2.29 MOLTEN CARBONATE FUEL CELLS	67
	2.30 SOLID OXIDE FUEL CELLS	67
	2.31 COMBINED HEAT AND POWER FUEL CELLS:	69
	2.32 REGENERATIVE OR REVERSIBLE FUEL CELLS:	69
	2.33 FUEL SUPPLY:	69
	2.34 HYDROGEN ENERGY STORAGE:	69
	2.35 HOW HYDROGEN STORAGE WORKS:	70
UNIT :III COMPONENTS OF ELECTRIC VEHICLES		
III	3.1 ELECTRIC PROPULSION SYSTEMS	71
	3.2 DC MOTOR DRIVES	74
	3.3 PRINCIPLE OF OPERATION AND PERFORMANCE	75
	3.4 COMBINED ARMATURE VOLTAGE AND FIELD CONTROL	80
	3.5 DC MOTORS WITH A CHOPPER CONTROLLER	80

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Brilliant Grammar School
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Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501 505.

	3.6 THE WAVEFORM HIGHLIGHTS THE FOLLOWING SALIENT FEATURES	83
	3.7MULTI-QUADRANT CONTROL OF CHOPPER-FED DC MOTOR DRIVES	84
	3.8 INDUCTION MOTOR DRIVES	84
	3.9 A FIELD-ORIENTED INDUCTION MOTOR EMULATES A SEPARATELY EXCITED DC MOTOR IN TWO ASPECTS	88
	3.10 CONTROL	88
	3.11DIRECTION ROTOR FLUX ORIENTATION SCHEME	88
	3.12 PERMANENT MAGNETIC BRUSH-LESS DC MOTOR DRIVES	89
	3.13 BLDC MOTOR DRIVES WITH FAULTY INVERTERS	91
	3.14 BASIC PRINCIPLES OF BLDC MOTOR DRIVES	92
	3.15BLDC Machine Construction and Classification	93
	3.16 SOME OF ITS BEST QUALITIES ARE AS FOLLOWS	95

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Brilliant Grammar School
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R.R. Dist-501505.

	3.17 METHODS FOR EVALUATING AND MODULATING BLDC MACHINE PERFORMANCE	97
	3.18 EVALUATION OF RESULTS:	97
	3.19 SWITCHED RELUCTANCE MOTOR DRIVES	98
	3.20 BASIC MAGNETIC STRUCTURE	99
	3.21 PRODUCTION OF TORQUE	101
	3.22 SRM DRIVE CONVERTER	102
	3.23 DIFFERENT METHODS OF OPERATION	104
	3.24 GENERATING MODE OF OPERATION (REGENERATIVE BRAKING)	106
	3.25 SENSOR LESS CONTROL:	108
	3.26 PHASE FLUX LINKAGE-BASED METHODS:	110
	3.27 PHASE INDUCTANCE-BASED METHOD	110
UNIT : IV MODELLING AND DESIGN OF ELECTRIC VEHICLES SYSTEM		
IV	4.1 INTRODUCTION	111
	4.2 AUTOMOTIVE ELECTRIC DRIVES:	112

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (70
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

	4.3 ELECTRIC DRIVE APPLICATIONS	114
	4.4 CONTROLLER DESIGN	115
	4.5 VEHICLE STABILITY CONTROL	116
	4.6 SYSTEM OF DYNAMIC VEHICLE CONTROL	117
	4.7 REGULATOR OF VEHICULAR MOTION	119
UNIT: V CHARGING METHODS		
V	5.1 POWER ELECTRONIC CONVERTER FOR BATTERY CHARGING	121
	5.2 CAUTIONARY NOTE	122
	5.3 CHARGING METHODS	123
	5.3.1 AC CHARGING	123
	5.3.2 DIRECT CURRENT (DC) CHARGING	124
	5.4 INDUCTIVE CHARGING	125
	5.5 BATTERY REPLACEMENT	125
	5.6 TECHNIQUES FOR RECHARGING	126
	5.7 COMMUNICATION:	128
	5.8 THE FOLLOWING TESTS ARE ALWAYS	128

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Abdullapur (W), Abdullapurmet (M),
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	CARRIED OUT	
	5.9 LIMITATION OF THE CHARGING CURRENT	129
	5.9.1 EU SYSTEM	129
	5.9.2 CHARGING PLUGS	130
	5.9.3 CHARGING TIME	130
	5.10 POWER SEMICONDUCTORS	131
	5.11 DC/DC CONVERTERS AND PWM	134
	5.12 ISOLATION BETWEEN EV BATTERY AND GRID	134
	5.13 CONSERVATION OF ENERGY	135
	5.14 BUCK AND BOOST MODE OF OPERATION FOR THE BATTERY DC-DC CONVERTER	135
	5.15 BENEFITS OF INCREASED IN ELECTRIC VEHICLE DEPLOYMENT:	136
	5.16 CHALLENGES IN ELECTRIC VEHICLES:	137
	5.17 TRENDS AND FUTURE DEVELOPMENTS:	137

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Abdullapur (V), Abdullapurmet (M),
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	5.18 DESIGN AND ANALYSIS OF MULTI-NODE CAN BUS FOR DIESEL HYBRID ELECTRIC VEHICLE	140
	5.18.1 COMPARATIVE STUDY OF CAN TOPOLOGY	140
	5.18.2 BRAKING MODE	141
	5.18.3 TRACTION MODE	141
	5.18.4 PARAMETRIC DESIGN	142

DIRECTOR
Brilliant Grammar School
Educational Society's Group
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Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

Author's Profile

Mr. R. SURENDRARAO is having more than 10 years of teaching Experience and currently serving as Assistant Professor in Mechanical Engineering Department at Kasireddy Narayanreddy College of Engineering and Research, Abdullapurmet, Telangana. and mentoring experience for B.Tech graduates. He has published 8 papers in national journals. He completed MTech from Intel Engineering College affiliated to JNTU Anathapur. He gave hisservices to 1 affiliated college of JNTUA before joining in the team of Kasireddy Narayanreddy College of Engineering and Research.

Mr. CH.NAVEEN KUMAR currently working as ASSISTANT PROFESSOR in MECHANICAL ENGINEERING at BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY, Abdullapur (V), Abdullapurmet (M]), R.R Dist-501505 Telangana. He completed M.Tech from JNTUH affiliated College and serving more than 6 years for BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY, He has Guided 18+ Under Graduate Level Students for their projects on various domains.

Mr. BEESAM NARSIMHA, Assistant Professor, Department of MECHANICAL ENGINEERING, he is having more than 10 years of teaching experience, currently working in Brilliant Grammar School Educational Society's Group of Institutions. He has obtained M.Tech. In ADVANCED MANFUCTURING SYSTEMS from JNTU Hyderabad and B.Tech. in MECHANICAL ENGINEERING from JNTU Hyderabad.

Prof S. L. NARSIMHA REDDY obtained in PhD in analysis on the performance of PEM fuel cell with multiphase flow and species transport using CFD FROM Veerabahadur Singh Purvanchal University, Jaunpur (UP) in the year 2011 and M.Tech from JNTU Anantapur in the year 2004. He has over 35 years of teaching experience. Currently he is working as Prof &HOD, Mechanical engineering, in Siddhartha institute of engineering and technology, Ibrahimpatnam, Ranga Reddy (Dist), Telangana. He has 4 Scopus indexed Journals 4 UGC Journals and one patent on his name.

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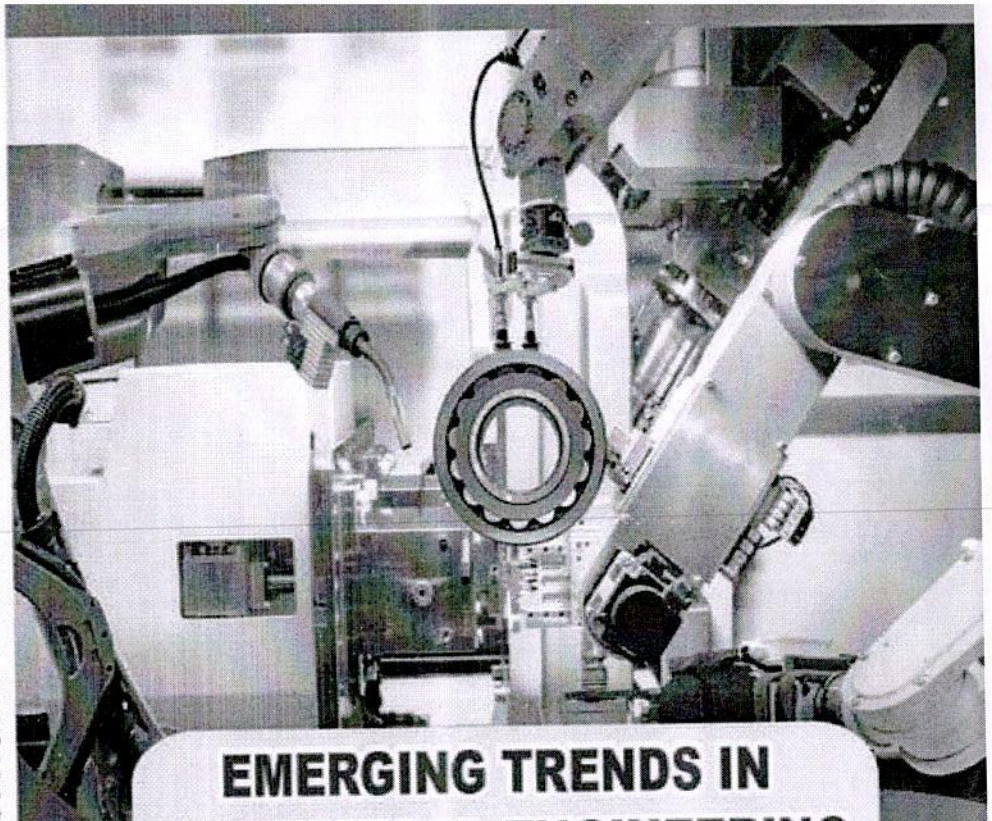

EMERGING TRENDS IN MECHANICAL ENGINEERING

Mr. R. SURENDRARAO
Mr. CH.NAVEEN KUMAR
Mr. BEESAM NARSIMHA
Prof S. L. NARSIMHA REDDY

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DIRECTOR
Brilliant Grammar School
Educational Society's Group

EMERGING TRENDS IN MECHANICAL ENGINEERING

FIRST EDITION

Authors

Mr. R. SURENDRA RAO

Assistant Professor

Kasireddy Narayanreddy College of Engineering and Research, Abdullapur (V), Abdullapur (M), R.R. District, Hyderabad, Telangana- 501 505

Mr. CH. NAVEEN KUMAR

Assistant Professor

Brilliant Institute of Engineering and Technology, Abdullapur (V), Abdullapurmet (M), Rangareddy District, Hyderabad, Telangana - 501 505.

Mr. BEESAM NARASIMHA

Assistant Professor

Brilliant Grammar School Educational Society's Group of Institutions-Integrated Campus, Abdullapur (V), Abdullapurmet(M), RangareddyDistrict, Hyderabad, Telangana State- 501 505

Dr. S. L. NARASIMHA REDDY

Professor

Siddhartha Institute of Engineering and Technology

Ibrahimpatnam, Hyderabad

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q,
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

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DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TG)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist.

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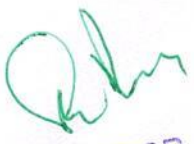

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Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

PREFACE

The technological advancements to be depicted in the course called emerging trends was a challenging task and therefore it was decided to prepare a learning material with the involvement of industrial and academic experts for its uniformity in the aspect of delivery, implementation and evaluation.

Over the coming years, technological developments such as Robotics, IOT, Artificial intelligence, smart controls are likely to have a significant impact on the world of work and employment. Looking towards the era in Technological advancement, Mechanical / Automobile / Production Engineering offers addition of new Dynamic subjects and new versions of core subjects. Diploma Mechanical/Automobile/Production Engineers should be familiar with new technologies from the fields of Automobile Engineering, HVAC, Energy Management, Advanced Manufacturing Processes, Agriculture and Farm Machines and many more. This Dynamic course will give insight to the recent practices adopted by the Mechanical Industries and awareness of these techniques will enhance career opportunities of Diploma Mechanical / Automobile / Production Engineers.

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Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

CONTENT

Chapter	Title	Page
I	Recent Trends in Automobile Industry	1-24
II	Process Engineering	25-50
III	Recent Trends in Manufacturing in Industry	51-96
IV	Energy Audit and Management	97-140
V	Agriculture Equipment and Post-Harvest Technology	141-206
	References	207-208

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TQ)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

Author's Profile

Mr. K. Mahesh currently providing service as Assistant Professor in Humanities and Sciences Department at Brilliant Grammar School Educational Society's Group of Institutions, Abdullapurmet, Telangana. He completed M.A English from Satavahana University affiliated college, SRR GOVT DEGREE AND PG college karimnagar. His teaching career is replete with handling several Important responsibilities and 6 years of academic experience.

Mrs. M. Pravalika is having more than 10 years of teaching Experience and currently serving as Assistant Professor in Humanities & Sciences Department at Kasireddy Narayanreddy College of Engineering and Research, Abdullapurmet, Telangana. She completed MA from pdmavathi university tirupathi and BA from SK University affiliated College.

Mr. T. Raja Shekar, he is currently working with Brilliant Institute of Engineering and Technology, Abdullapur Met Hyderabad Telangana, he has overall 20 years of teaching experience he served as a Assistant Professor and in charge HOD of H & S department, apart from teaching he also instrumental in various committees in moulding the students career. He completed his post graduation in English from KU campus, MBA in HR from JNTUH and also PGDTE from OU. He has trained and Guided to UG Level and PG Level Students for their soft skill training and CRT training programs. His consistently putting his efforts for the betterment of students and institution.

Dr. Konidala Murali is presently working as an Associate Professor of English in Siddhartha Institute of Engineering and Technology, Ibrahimpatnam, Hyderabad. He was awarded Ph.D. from Hyderabad Central University, M. Phil Linguistics from P. S Telugu University, M.A Applied Linguistics from Hyderabad Central University and M. A English Literature from Acharya Nagarjuna University, Guntur. He has been working in several Engineering colleges for last 10 years. He has good experience in English language teaching and communication skills. He presented 2 International Papers and 6 National Papers and attended for FDP programmes in different Engineering colleges. And also attended 40 days workshop on 'Linguistic survey of India' in CIIL, Mysore. He is a member of Telugu Linguistic Forum.

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Basic English Grammar for Beginners

Basic English Grammar for Beginners

Mr. K. Mahesh
Mrs. M. Pravalika
T. Raja Shekar
Dr. Konidala Murali

αIP

Director
Brilliant Grammar School
Educational Society's Group
of Institutions, Abdullapurmet
Abdullapur (V), Abdullapurmet (M)
R.R. Dist-501 505

BASIC ENGLISH GRAMMAR FOR BEGINNERS

FIRST EDITION

Authors

Mr. K. MAHESH
Assistant Professor
Brilliant Grammar School Educational Society's Group of Institutions-Integrated Campus, Abdullapur (V), Abdullapurmet(M), RangareddyDistrict, Hyderabad, Telangana State- 501 505

Mrs. M. PRAVALIKA
Assistant Professor
Kasireddy Narayanreddy College of Engineering and Research, Abdullapur (V), Abdullapur (M), R.R. District, Hyderabad, Telangana- 501 505.

T. RAJA SHEKAR
Assistant Professor
Brilliant Institute of Engineering and Technology, Abdullapur (V), Abdullapurmet (M), Rangareddy District, Hyderabad, Telangana - 501 505.

Dr. KONIDALA MURALI
Associate Professor
Siddhartha Institute of Engineering and Technology Ibrahimpatnam, Hyderabad

αIP

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TG)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

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Abdullapur (V), Abdullapurmet (M),
R.R. Dist-Hyderabad.

MESSAGE

In this era, English has become a global language for trade, culture. literature and Industry. Learning English is not an optional but a necessity. Minimum level of mastery over English Language is essential to be an effective communicator and presenter. As far as India is concerned, many students from regional medium, find verry difficult to speak and write in English. Therefore, they don't have confidence in their studies when they reach tertiary level of education. This book helps you to study the spoken and written skills easily.

This book is designed as a reliable reference book on basic knowledge of English Language structure and grammar usage with a view to promote verbal ability mainly for beginners particularly for the students who are from Tamil medium.

Suggestions for improvement and corrections in this book are welcome.

Author

CONTENTS

Parts of Speech	1
Tenses	15
Present Tense	17
Past Tense	33
Future Tense	39
Easy Way to Learn Spoken English for Tamil Medium Students	55
Sample Question Words	71
Active and Passive voice	75
Direct to Indirect Speech	83
Degrees of Comparison	89
Articles	95
Connectives	99
Common Errors in English	103
Vocabulary Learning	107
Commonly used Idioms and Phrase	111
Punctuation Marks	113
Modal Auxiliaries	119

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (T

Author's Profile

DR. J. VENUGOPAL, Professor of MBA presently working with Kasireddy Narayan Reddy College of Engineering & Research, (Brilliant Group of Technical Institutions), Affiliated to Jawaharlal Nehru Technological University, Hyderabad. He has qualified in Ph. D – Management Science & Ph. D – Economics and also qualified in Management with multiple specializations like HRM, Finance, Marketing & Intl. Business., from AIMA New Delhi; Personnel Management (Gold Medalist) – NIPM, Kolkata and Training and Development, (Best Award Holder for the Year 1995). ISTD, New Delhi. Also qualified in M. Com., (Taxation) Andhra Uni., Vizag; MA Sociology, Osmania Uni., Hyderabad; LLB , Osmania Uni., Hyderabad; M.Com., (Management Accountancy – Andhra Univ.,), M.Com – Management Accountancy, S.V. Uni., Tirupati; B.LISc.., S.V. Uni., Tirupati. He is also life member of various recognized professional bodies like NIPM-Kolkata, ISTD-New Delhi, ALUMINI – AIMA, New Delhi, I2 OR etc, He has also obtained various awards for his academic and research activities from various recognized professional bodies. He has also conferred with Social Scientist Award for his contribution from the recognized professional body

Mr. T. RAJU currently working as Assistant Professor in the ASSISTANT PROFESSOR in the BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY, Abdullapur (V), Abdullapurmet (M)), R.R Dist-501505 Telangana, he has completed MBA from JNTUH from JNTUH affiliated College and presently pursuing Ph.D. from Annamalai since-2021. She has been serving more than 12 years for BRILLIANT INSTITUTE OF ENGINEERING AND TECHNOLOGY; Mr. T. RAJU gave his services to 2 affiliated colleges of Jawaharlal Nehru Technological University before joining in the team of BRIL. In his 12 years of experience he published 2 national articles in Journals. He has Guided Post Graduate Level Students for their projects. In his tenure, He has successfully completed 60+ projects on various domains.

Mr. M. ANAND is having 7 years of teaching experience and currently working as Assistant Professor in Humanities and Sciences Department at Brilliant Grammar School Educational Society's Group of Institutions-Integrated Campus, Abdullapurmet, Telangana. He had completed Master's Degree in Business Administration from JNTU-Kakinada.

DR. PRAKASH CHINTHIREDDY has obtained MBA Masters Degree in Human Resource Management from Kakatiya University, Warangal, and acquires M.com from Kakatiya University, Warangal. PhD in Business Management from Osmania University, Telangana. Thesis submitted in Human Resources Management. He has more than 13 years of Teaching experience in various levels at Business Management in colleges and institutions and currently working as a Professor of Business Administration Department at SIDDHARTHA INSTITUTE OF ENGINEERING & TECHNOLOGY, Ibrahimpatnam, and Telangana. He has attended workshops and faculty development programs in various levels. He has published more than twenty research articles in reputed International, National journals and presented papers in International and National Conferences.

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MANAGEMENT FUNDAMENTALS AND ORGANIZATIONAL BEHAVIOUR

MANAGEMENT FUNDAMENTALS AND ORGANIZATIONAL BEHAVIOUR

DR. J. VENUGOPAL
MR. T. RAJU
MR. M. ANAND
DR. PRAKASH CHINTHIREDDY

αIP

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

MANAGEMENT FUNDAMENTALS AND ORGANIZATIONAL BEHAVIOUR

FIRST EDITION

Authors

Dr. J.VENU GOPAL
Professor
Kasireddy Narayanreddy College of Engineering and Research,
Abdullapur (V), Abdullapur (M), R.R. District,
Hyderabad, Telangana- 501 505.

Mr. T. RAJU
Assistant Professor
Brilliant Institute of Engineering and Technology,
Abdullapur (V), Abdullapurmet (M), Rangareddy District,
Hyderabad, Telangana - 501 505.

Mr. M. ANAND
Assistant Professor
Brilliant Grammar School Educational Society's Group of Institutions-integrated Campus, Abdullapur (V), Abdullapurmet(M), RangareddyDistrict, Hyderabad, Telangana State- 501 505

Dr. PRAKASH CHINTHIREDDY
Professor
Siddhartha Institute of Engineering and Technology
Ibrahimpatnam, Hyderabad.

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7C
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

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of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist.

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Any attempt at any level can't be satisfactorily completed without our students' collaborative effort, resulting in our Book being unique.

Preface

This book " **Management Fundamental and Organizational Behavior** " is about achieving behavioral change in organizations. Based on scientifically validated principles, it provides a specific, practically applicable answer to the "how" question of behavioral change. This distinguishes this book from many other management books.

Management Fundamental and Organizational Behavior for short, is the field that deals with behavioral change in organizations. Some prefer to speak of "targeted behavioral influence". The author's approach is balanced between management and psychological perspective and is pedagogically enhanced with up-to-date illustrative examples, case studies, and assessment material.

It can be defined as the study of the way different individuals interact with each other in a group. The main objective of the study of this subject is to create a more efficient organization. The main logic behind the study of organizational behavior is that the various scientific methods can be implemented successfully in the management of workers. The different theories of organizational behavior are implemented for the human resource so that the performance, efficiency, and output can be maximized from individual group members.Existing literature on organizational behaviour is either lopsided or ignores the management dimensions.

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7
Abdullapur (V), Abdullapurmet (M)

CONTENT

Chapter	Title	Page
I	History of management	1-22
II	Introduction to ob	23-32
III	Personality	33-46
IV	Learning	47-56
V	Group dynamics and organizational change	57-66
VI	Recent trends in ob	67-78
VII	Problem solving, decision- making and planning	79-92
VIII	Organizing and controlling	93-116
IX	Organizational conflict	117-128
X	Overview to hrm	129-164
	References	165

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus
Abdullapur (V), Abdullapurmet (M)
R.R. Dist-501505.

Author's Profile

αIP
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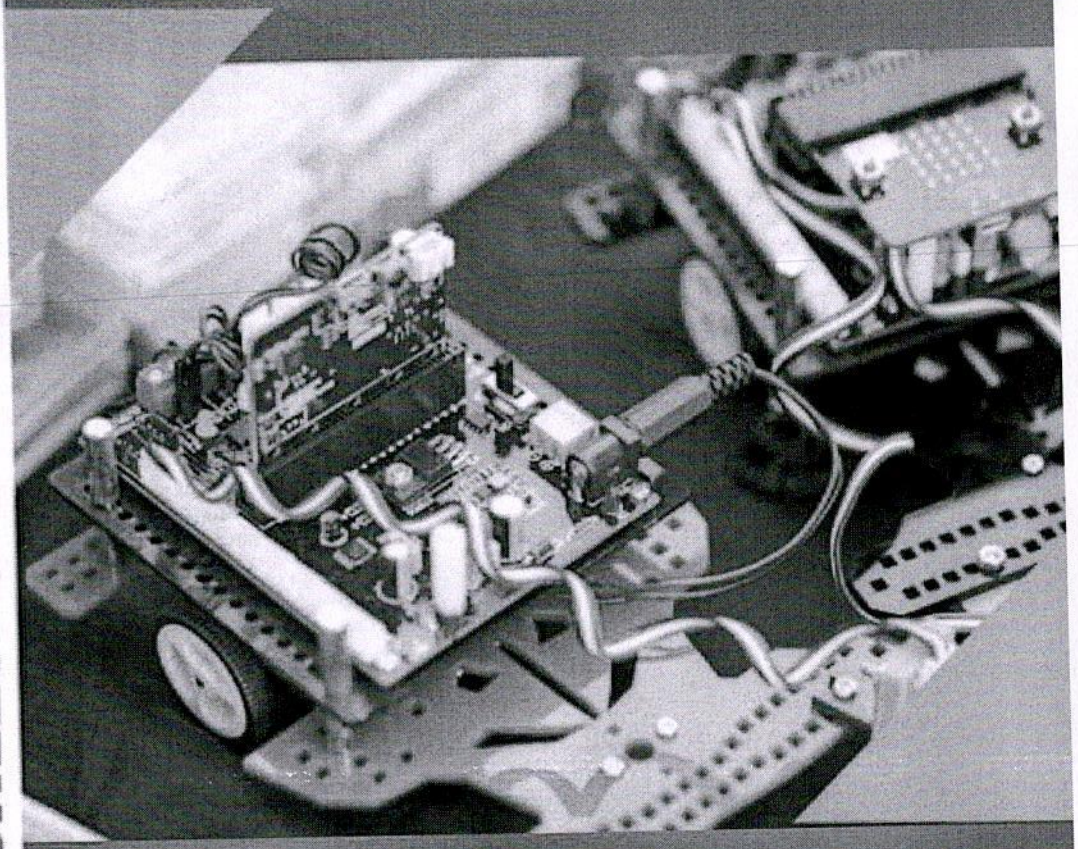

Dr.SOMAVARAPU VAMSHI KRISHNA
Mr. A.MADHUSUDHANA REDDY
Mrs.R.SUNEETHA
Prof.MD FAYMUDDIN

αIP

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-5 505.

EMBEDDED SYSTEMS

FIRST EDITION

Authors

Dr. SOMAVARAPU VAMSHI KRISHNA
Professor
Siddhartha Institute of Engineering and Technology
Ibrahimpatnam, Hyderabad

Mr. A. MADHUSUDHANA REDDY
Assistant Professor
Visvesvaraya College of Engineering & Technology
M.P. Patelguda, Bonguloor 'x' Roads, Ibrahimpatnam Mandal,
Ranga Reddy District-501510

Mrs. R. SUNEETHA
Assistant Professor
Siddhartha Institute of Engineering and Technology
Ibrahimpatnam, Hyderabad

MD FAYMUDDIN
Assistant Professor
Brilliant Grammar School Educational Society's Group of
Institutions-Integrated Campus, Abdullapur (V),
Abdullapurmet(M), RangareddyDistrict, Hyderabad,
Telangana State- 501 505

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7C
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

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Email: editoraippublications@gmail.com

Website: www.alphainternationalpublication.com

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TG)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

SYLLABUS

UNIT I INTRODUCTION TO EMBEDDED SYSTEM DESIGN

Complex systems and microprocessors- Embedded system design process –Design example: Model train controller- Design methodologies- Design flows - Requirement Analysis – Specifications- System analysis and architecture design – Quality Assurance techniques - Designing with computing platforms – consumer electronics architecture – platform-level performance analysis.

UNIT II ARM PROCESSOR AND PERIPHERALS

ARM Architecture Versions – ARM Architecture – Instruction Set – Stacks and Subroutines – Features of the LPC 214X Family – Peripherals – The Timer Unit – Pulse Width Modulation Unit – UART – Block Diagram of ARM9 and ARM Cortex M3 MCU.

UNIT III EMBEDDED PROGRAMMING

Components for embedded programs- Models of programs- Assembly, linking and loading – compilation techniques- Program level performance analysis – Software performance optimization – Program level energy and power analysis and optimization – Analysis and optimization of program size- Program validation and testing.

UNIT IV REAL TIME SYSTEMS

Structure of a Real Time System –- Estimating program run times – Task Assignment and Scheduling – Fault Tolerance Techniques – Reliability, Evaluation – Clock Synchronization.

UNIT V PROCESSES AND OPERATING SYSTEMS

Introduction – Multiple tasks and multiple processes – Multirate systems- Preemptive real-time operating systems- Priority based scheduling- Interprocess communication mechanisms – Evaluating operating system performance- power optimization strategies for processes – Example Real time operating systems-POSIX-Windows CE. Distributed embedded systems – MPSoCs and shared memory multiprocessors. – Design Example - Audio player, Engine control unit – Video accelerator.

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (70
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

Table of Content

UNIT NO.	DESCRIPTION	PAGE NO.
1.	**INTRODUCTION TO EMBEDDED SYSTEM DESIGN**	
1.1	Complex System Microprocessor	10
1.2	The Embedded System Design Process	14
1.3	Design Example: Model Train Controller	20
1.4	Design Methodologies	22
1.5	Design Flows	25
1.6	Requirement Analysis	30
1.7	Specifications	32
1.8	System Analysis and Architecture Design	33
1.9	Quality Assurance Techniques	35
1.10	Designing with Computing Platforms	36
1.11	Consumer Electronics Architecture	40
1.12	Platform-level Performance Analysis	43
2.	**ARM PROCESSOR AND PERIPHERALS**	
2.1	ARM Architecture Evolution	48
	2.1.1 ARM Architecture Versions	49
2.2	ARM Architecture	51
	2.2.1 Introduction	51
	2.2.2 The ARM Architecture Profiles	54
2.3	ARM Instruction Set	57
	2.3.1 ARM Instruction Set Architecture	57
2.4	Stacks and Subroutines	58
	2.4.1 Stack	61
	2.4.2 Stack types	61
2.5	Features of LPC214X family	62
	2.5.1 Architecture Block Diagram of LPC2148	64

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

UNIT NO.		DESCRIPTION	PAGE NO.
	2.6	Peripherals	66
	2.7	Timer/Counter in Embedded System	70
	2.8	Introduction to PWM	74
		2.8.1 Ways to generate PWM	77
	2.9	UART	77
		2.9.1 Steps of UART transmission	83
	2.10	ARM Cortex M3	87
		2.10.1 Features of ARM CortexM3	87
		2.10.2 ARM CortexM3 Architecture	89
	2.11	ARM Cortex M3MCU	91
3.		**EMBEDDED PROGRAMMING**	
	3.1	Components for Embedded Programming	93
		3.1.1 State Machines	93
		3.1.2 Circular Buffers and Steam-Oriented Programming	95
		3.1.3 Queues	97
	3.2	Models of Programs	98
		3.2.1 Data Flow Graphs	99
		3.2.2 Control/Data Flow Graphs	101
	3.3	Assembly, Linking and Loading	103
		3.3.1 Assemblers	104
		3.3.2 Linking	108
	3.4	Compilation Techniques	109
		3.4.1 The Compilation Process	109
		3.4.2 Basic Compilation Methods	110
		3.4.3 Compiler Optimizations	113

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

UNIT NO.	DESCRIPTION	PAGE NO.
	3.5 Program Level Performance Analysis	118
	3.5.1 Elements of Program Performance	119
	3.5.2 Measurement- Driven Performance Analysis	120
	3.6 Software Performance Optimization	122
	3.6.1 Loop Optimizations	122
	3.6.2 Cache Optimizations	124
	3.7 Program Level Energy and Power Analysis and Testing	125
	3.8 Analysis and Optimization of Program Size	126
	3.9 Program Validation and Testing	127
	3.9.1 Clear-Box Testing	128
	3.9.2 Black- Box Testing	132
	3.9.3 Evaluating Functional Tests	133
4.	**REAL TIME SYSTEMS**	
	4.1 Introduction	134
	4.2 Structure of a Real Time Systems	134
	4.3 Estimating Program Run Times	136
	4.3.1 Analysis of Source Code	137
	4.3.2 Accounting for Pipelining	139
	4.3.3 Cache	140
	4.3.4 Virtual Memory	141
	4.4 Task Assignment and Scheduling	142
	4.4.1 Scheduling Algorithms	143
	4.4.2 Multiprocessor Scheduling	145
	4.4.3 Classical Uniprocessor Scheduling Algorithms	147

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (TG)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

UNIT NO.	DESCRIPTION	PAGE NO.
	4.4.4 Rate-Monotonic Scheduling Algorithm	148
	4.4.5 Earliest-Deadline-First Scheduling	151
	4.4.6 Uniprocessor Scheduling of Iris Tasks	153
	4.4.7 Multiprocessor Scheduling	156
4.5	Fault Tolerance Techniques	159
	4.5.1 Causes Failures	159
	4.5.2 Fault Types	160
	4.5.3 Fault Detection	163
	4.5.4 Fault and Error Containment	163
	4.5.5. Redundancy	165
4.6	Reliability Evaluation Techniques	166
	4.6.1 Obtaining Parameter Values	166
	4.6.2 Obtaining Device-Failure Rates	166
	4.6.3 Measuring Error-Propagation Time	168
	4.6.4 Reliability Models for Hardware Redundancy	169
	4.6.5 Fault Latency	172
4.7	Clock Synchronization	172
	4.7.1 Synchronization Problem	175
	4.7.2 Temporal Synchronization	175
	4.7.3 Issues For Synchronization	177
	4.7.4 Propagation Time and Read Errors	177
	4.7.5 Synchronization Skew	179
	4.7.6 Hardware Synchronization	180
	4.7.7 Software Techniques	181
	4.7.8 Hybrid Synchronization	182

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7C)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

UNIT NO.	DESCRIPTION	PAGE NO.
5.	**PROCESSES AND OPERATING SYSTEMS**	
5.1	Multiples Tasks and Multiple Process	184
5.2	Multirate System	186
	5.2.1 Timing Requirements on Processes	186
	5.2.2 CPU Metrics	188
5.3	Preemptive Tasks Real-Time Operating Systems	190
	5.3.1 Preemption	190
	5.3.2 Priorities	191
5.4	Priority- Based Scheduling	191
	5.4.1 Rate-Monotonic Scheduling	193
	5.4.2 Earliest- Deadline First Scheduling	196
	5.4.3 RMS Vs EDF	198
	5.4.4 Priority Inversion	199
5.5	Interprocess Communication Mechanisms	200
	5.5.1 Shared Memory Communication	200
	5.5.2 Message Passing	201
	5.5.3 Signals	202
	5.5.4 Mailboxes	203
5.6	Example Real Time Operating System	204
	5.6.1 POSIX	204
	5.6.2 Windows CE	209
5.7	Evaluating Operating System Performance	212
5.8	Power Optimization strategy for Processes	215
5.9	Distributed Embedded Architectures	219
5.10	MPSoCs Shared Memory Multiprocessor	222
5.11	Audio Player	224
5.12	Engine Control Unit	226
	5.12.1 Theory of Operation and Requirements	226
	5.12.2 Specification	227
	5.12.3 System Architecture	228
5.13	Design a Video Accelerator	230

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7Q)
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.

Author's Profile

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Ms.T.TEJASWINI
Mr.JOBIN JOHN
Mrs.MEKALA SUSHMITHA
Mr.P.PARUSHARAMULU
Mr.P SRIDHAR

αIP

DIRECTOR
Brilliant Grammar School
Educational Society's Group
of Institutions-Integrated Campus (7C.,
Abdullapur (V), Abdullapurmet (M),
R.R. Dist-501505.