Basic Electrical and Electronics Engineering

Dr. N. Karuppiah
Dr. S. Muthubalaji

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

Dr.N.Karuppiah, M.E., Ph.D

Associate Professor

Department of Electrical and Electronics Engineering

Vardhaman College of Engineering

Kacharam, Shamshabad, Hyderabad

Telangana – 501 218

Dr.S.Muthubalaji, M.E., Ph.D

Professor

Department of Electrical and Electronics Engineering

CMR College of Engineering & Technology

Kandlakoya, Medchal Road, Hyderabad

Telangana – 501 401

SHANLAX PUBLICATIONS
Madurai, Tamil Nadu, India

Basic Electrical and Electronics Engineering

ISBN: 978-93-87871-10-6

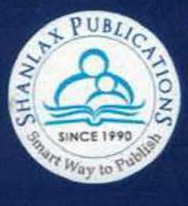
First Edition: 2018

Publisher
SHANLAX PUBLICATIONS
61, 66 T.P.K. Main Road,
Vasantha Nagar,
Madurai – 625003
Tamil Nadu, India

Ph: 0452-4208765,
Mobile: 7639303383
email: publisher@shanlaxpublications.com
web: www.shanlaxpublications.com

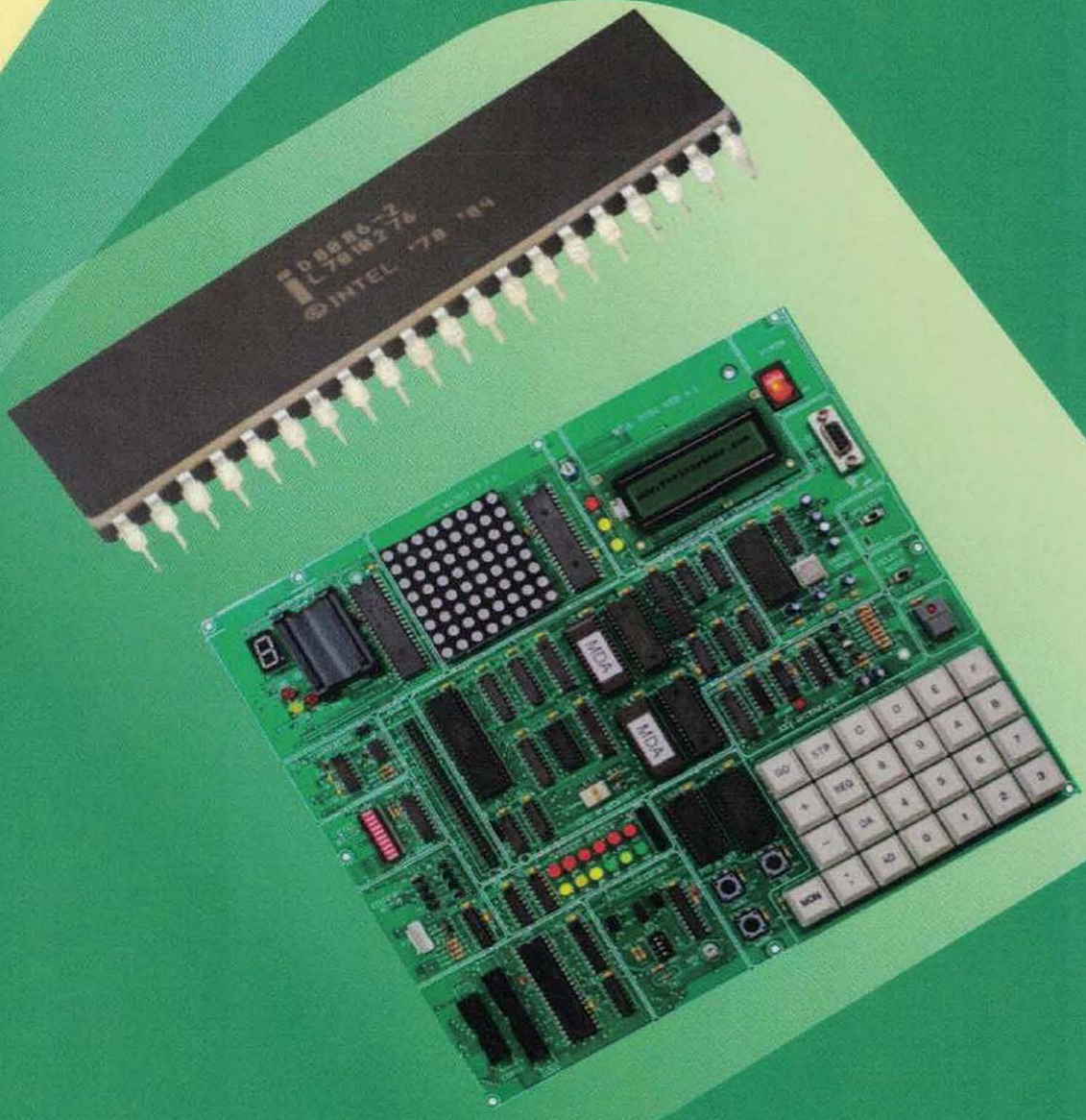
CONTENTS

ISBN 938787110-X
9 789387 871106



SHANLAX PUBLICATIONS
61,66, TPK Main Road, Vasantha Nagar, Madurai - 625 003,
Tamilnadu, India, publisher@shanlaxpublications.com
www.shanlaxpublications.com

MICROPROCESSOR AND MICROCONTROLLER



Dr. N. Karuppiah
Dr. S. Ravivarman

MICROPROCESSOR AND MICROCONTROLLER

Authors

Dr. N. Karuppiah
Professor/EEE
Vardhaman College of Engineering
Shamshabad, Hyderabad - 501 218

Dr. S. Ravivarman
Professor/EEE
Vardhaman College of Engineering
Shamshabad, Hyderabad - 501 218

SHANLAX PUBLICATIONS

MICROPROCESSOR AND MICROCONTROLLER

First Edition: 2018

ISBN: 978-93-87871-86-1

Price: Rs. 220/-

Publisher

SHANLAX PUBLICATIONS
66, T.P.K. Main Road
Vasantha Nagar
Madurai – 625003
Tamil Nadu, India

Ph: 0452-4208765,
Mobile: 7639303383
email:publisher@shanlaxpublications.com
web: www.shanlaxpublications.com

CONTENT

ISBN
9 789387 871861

SHANLAX
PUBLICATIONS
shanlaxpublications.com
publisher@shanlaxpublications.com

ISBN

SHANLAX PUBLICATIONS

shanlaxpublications.com
publisher@shanlaxpublications.com

OPERATION AND CONTROL IN POWER SYSTEM

B. RAJA GOPAL REDDY

OPERATION AND CONTROL IN POWER SYSTEM

Author

B. Raja Gopal Reddy

Associate Professor

Vardhaman College of Engineering, Hyderabad

SHANLAX PUBLICATIONS

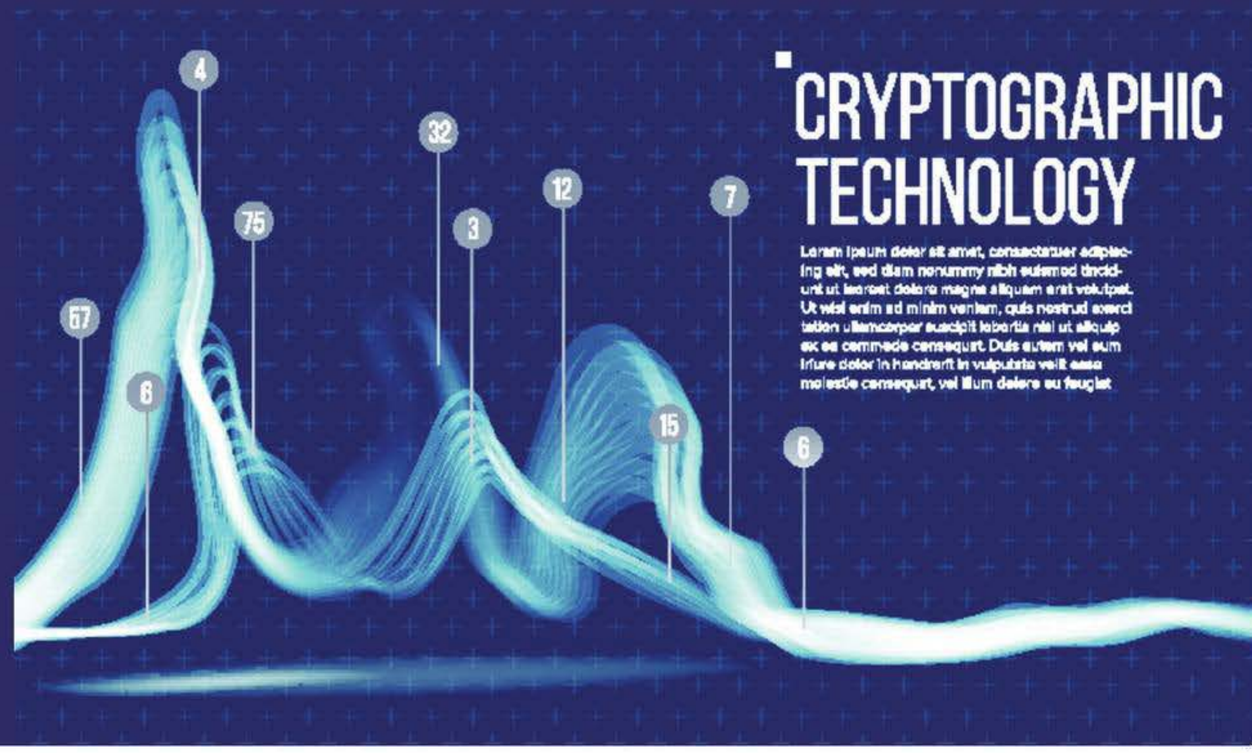
CONTENTS

In quantum cryptography, quantum key distribution protocols (QKDPs) employ quantum mechanisms to distribute session key and public discussions to check for eavesdroppers and verify the correctness of a session key. However, public distribution requires additional communication rounds between a sender and receiver. Although, QKDPs allow legitimate participants to establish a session key without initially sharing secret keys and do not need a TC, their security is based on the assumption of authenticated participants. By contrast, classical cryptography provides convenient techniques that enable efficient key verification and user authentication. In this work classical cryptography and quantum cryptography are combined to authenticate users and for successful detection of eavesdropping. Mathematical analysis of the integration is presented. The significant advantage of the integration is, it provides uncompromised security.

Quantum cryptography is a new method for secret communications offering the ultimate security assurance of the inviolability of a Law of Nature. In this book we shall describe the theory of quantum cryptography, its potential relevance and the development of a prototype system at HQKDPs, which utilizes the PRISUM TOOL of single-photon interference.

978-613-9-98097-0

Quantum Cryptography



CRYPTOGRAPHIC TECHNOLOGY

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat

Lalu Naik Ramavath

Quantum Cryptography & Information Security

LAP LAMBERT Academic Publishing

Ramavath

This book covers the types of Authorship Analysis techniques such as Authorship Verification, Authorship Attribution and Author Profiling. It covers the suitable stylistic features to increase the prediction accuracy of the demographic profiles such as gender, age and location. It covers the importance of feature selection algorithms to increase the accuracy of profiles prediction. It covers the importance of different term weight measures from various domains for better Author Profiling. In this book we explained one new term weight measure for strengthening the differentiating power of the feature thereby increasing the accuracies of profiles prediction in Author Profiling. This book also covers different types of approaches proposed by various researchers for Author Profiling with their merits, demerits, and limitations. This book also covers an alternative approach to address the draw backs of the existing approaches and to increase the efficiency of profiles prediction in Author Profiling.

T Raghunadha Reddy working as Associate Professor in Department of Information Technology, Vardhaman College of Engineering, Hyderabad. He completed his M.Tech from SIT, JNTUH, Hyderabad. He completed his Ph.D from JNTUH, Hyderabad. His areas of research interests are Data Mining, Machine Learning and Deep Learning.

978-613-9-90869-1

Raghunadha Reddy, Vishnu Vardhan

T. Raghunadha Reddy
B. Vishnu Vardhan

A Profile Specific Document Weighted Approach for Author Profiling

LAP LAMBERT Academic Publishing

Cover content authentication is an essential feature for some applications like temper proofing, image integrity protection, military communication, law enforcement, etc. To provide cover content authentication content-aware data hiding is essential. Most of the data hiding techniques in the literature cover content is not vital for data hiding. Some of the techniques prone to flipped pixels problem and smoothing effect at edges and also trade-off between embedding capacity and visual quality is challenging task. The purpose of this book is to make data hiding techniques as cover content centric irrespective of the application.

Muni Sekhar Velpuru working as an Associate Professor at Vardhaman College of Engineering. He completed Graduation(M. Tech) from NITK. He completed Ph.D from JNTUH, Hyderabad in CSE. Furthermore, his research interest includes Data Hiding, Computer-Vision and Machine Learning.

978-613-9-89843-5

Data Hiding

velpuru

Muni Sekhar velpuru

Content-Aware Data Hiding Techniques

LAP LAMBERT Academic Publishing

Muni Sekhar velpuru

Content-Aware Data Hiding Techniques

LAP LAMBERT Academic Publishing

Imprint

Cover image: www.ingimage.com

Publisher:
LAP LAMBERT Academic Publishing
is a trademark of
International Book Market Service Ltd., member of OmniScriptum Publishing Group
17 Meldrum Street, Beau Bassin 71504, Mauritius

Printed at: see last page
ISBN: 978-613-9-89843-5

Zugl. / Approved by: JNTUH, Hyderabad

TABLE OF CONTENTS

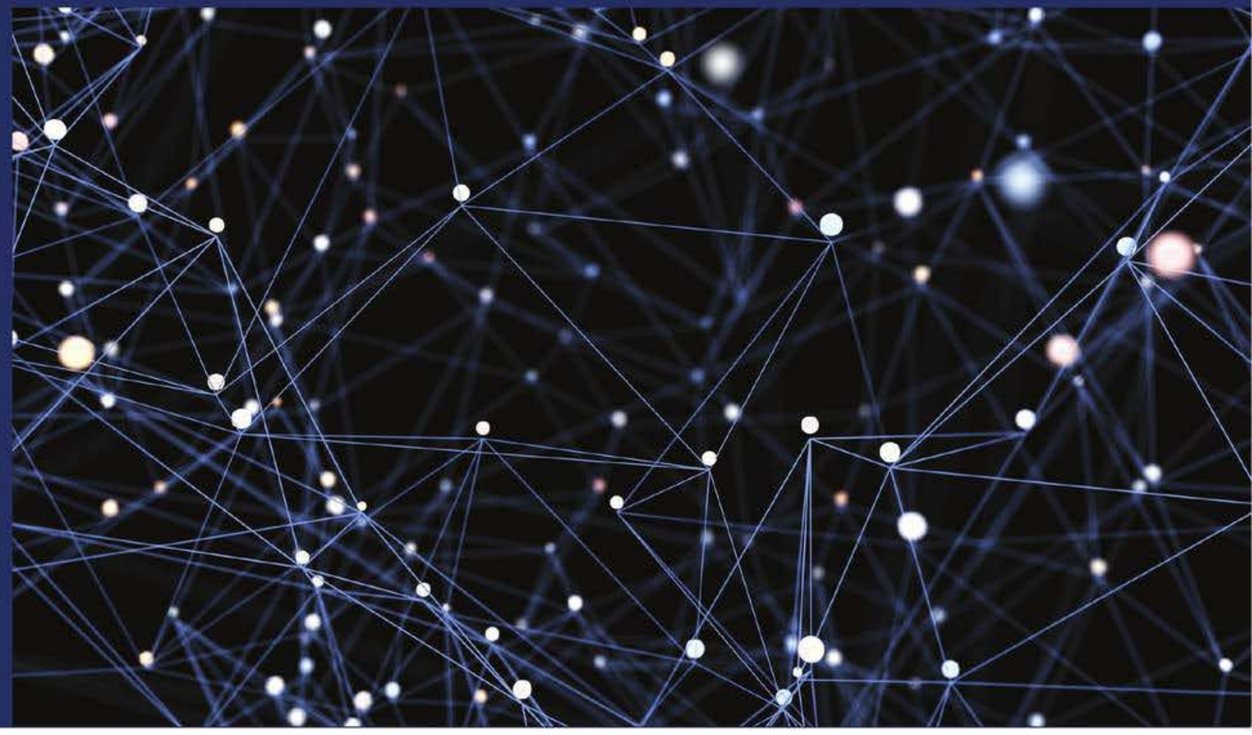
This book covers the recent research trends in Mobile Adhoc Networks (MANETs). It explains the trust management methods in MANET through trust computation, aggregation, propagation and prediction. This book has a detailed discussion on soft computing methods in MANETs like fuzzy logic, fuzzy petrinets, Concurrent Reasoning Algorithm (CRA) and Dempster Shafer Theory (DST). This book explains the need of service oriented architecture in MANETs. It covers the different service discovery and composition methods. This book helps the students and researchers to understand the current trends in MANETs and to do the quality research.

Dr. Nageswara Rao Sirisala, Professor in Vardhaman College of Engineering, Hyd, received his Ph. D from Dept of CSE, JNT University, Anantapuramu, has 14 years of Experience in Teaching and Research. Dr. C. Shoba Bindu, Professor, Dept of CSE, JNTUA College of Engineering, Anantapuramu. She has 19 years of experience in teaching and research.

978-613-8-33389-0

Mobile Adhoc Networks

Sirisala, Bindu



Nageswara Rao Sirisala
C. Shoba Bindu

Mobile Adhoc Networks: A Research Perspective

LAP LAMBERT Academic Publishing

MULTIMEDIA SECURITY PARADIGMS

A Peer-to-Peer Network Perspective

Dr. Ramesh Shahabadkar
Dr. S. Sai Satyanarayana Reddy

MULTIMEDIA SECURITY PARADIGMS

A Peer-to-Peer Network Perspective

Dr. Ramesh Shahabadkar
Dr. S. Sai Satyanarayana Reddy

notionpress.com
INDIA · SINGAPORE · MALAYSIA

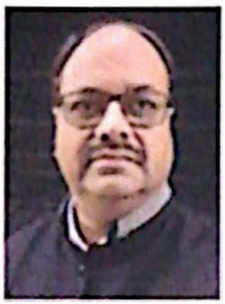
Notion Press

Old No. 38, New No. 6
McNichols Road, Chetpet
Chennai - 600 031

First Published by Notion Press 2018

ISBN 978-1-64324-989-6

Contents



Dr. Ramesh Laxmanrao Shahabadkar

BE, M.Tech, PhD, LMISTE, LMCSI

I am an internationally known patent researcher, academician, and academic leader. I have excellent track records of enhancing academics, teaching-learning and training. I have 27 years of highly successful professional experience, out of which 5 years in patent research and 22 years in teaching at all levels of Engineering. I have been actively involved in technical education, corporate training programs and Intellectual property rights. I have taught various subjects in the area of computers and information technology across Telangana and Karnataka State, India. I am being recognized as an exceptional teacher and a Corporate Trainer of excellence for my unconventional approach towards teaching and abilities to give real life examples and case studies from my long professional career experience. Furthermore, have conceived, designed, delivered and managed the technology-schools and university curriculums in India and abroad with contemporary specializations with greater career prospects like Information Technology and Intellectual Property Rights with United States Patent and Trademark Office (USPTO). I have contributed in placement techniques to help students to groom themselves generation ahead of the rest of the technology schools and universities and achieved good placement. I am down to the earth, friendly, honest and sincere leader with a very high degree of hands on situational and motivational leadership skills. I have received best academician, distinguished faculty and best researcher awards for my contribution in academics and research.

Dr. Seelam Sai Satyanarayana Reddy

B.E, M.E., Ph.D, SMIEEE, FIETE, FIE, CE, LMCSE, LMISTE, FGEDC, MIUCEE, MIAENG, MIET, MASEE

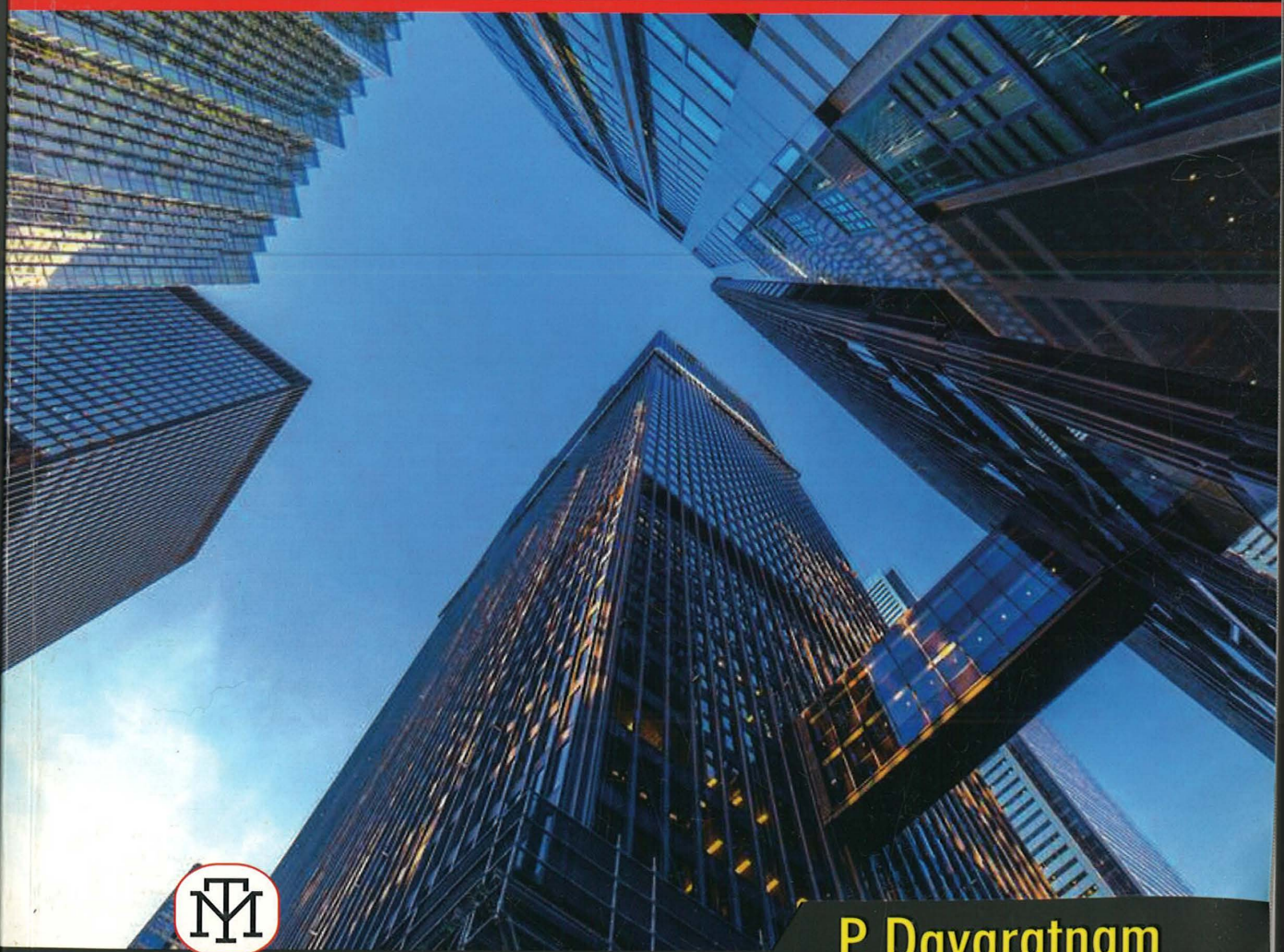
I am a Professor in Computer Science and Engineering Department, Post-graduation from BITS, Pilani.

I have 25 years of teaching Experience and Administration in Engineering colleges. I am Chairman for Board of Studies and outstanding researcher in the field of cognitive science, data mining. I am Principal investigator for two projects and guiding seven Ph.D. scholars. I received best teaching award from various organizations and visited many universities around the world as a member of ASEE and GEDC. Certified professional in Microsoft, IBM and CISCO. I published many papers in reputed journals and attend conferences in many countries. Filed three patents and author for two books. Very hard working nature and very good integrator and Driver by nature.

Price ₹250
ISBN 978-1-64324-989-6
90000
9 781643 249896

SECOND EDITION

Limit State Design of Reinforced Concrete Structure



P. Dayaratnam
P. Sarah

MEDTECH
A Division of
Scientific International

Limit State Design of Reinforced Concrete Structure

SECOND EDITION

P. Dayaratnam
Formerly Professor and head of Civil Engineering
Formerly Dean of Research and Development
Indian Institute of Technology, Kanpur
Formerly Vice Chancellor, J.N.T. University, Hyderabad, India

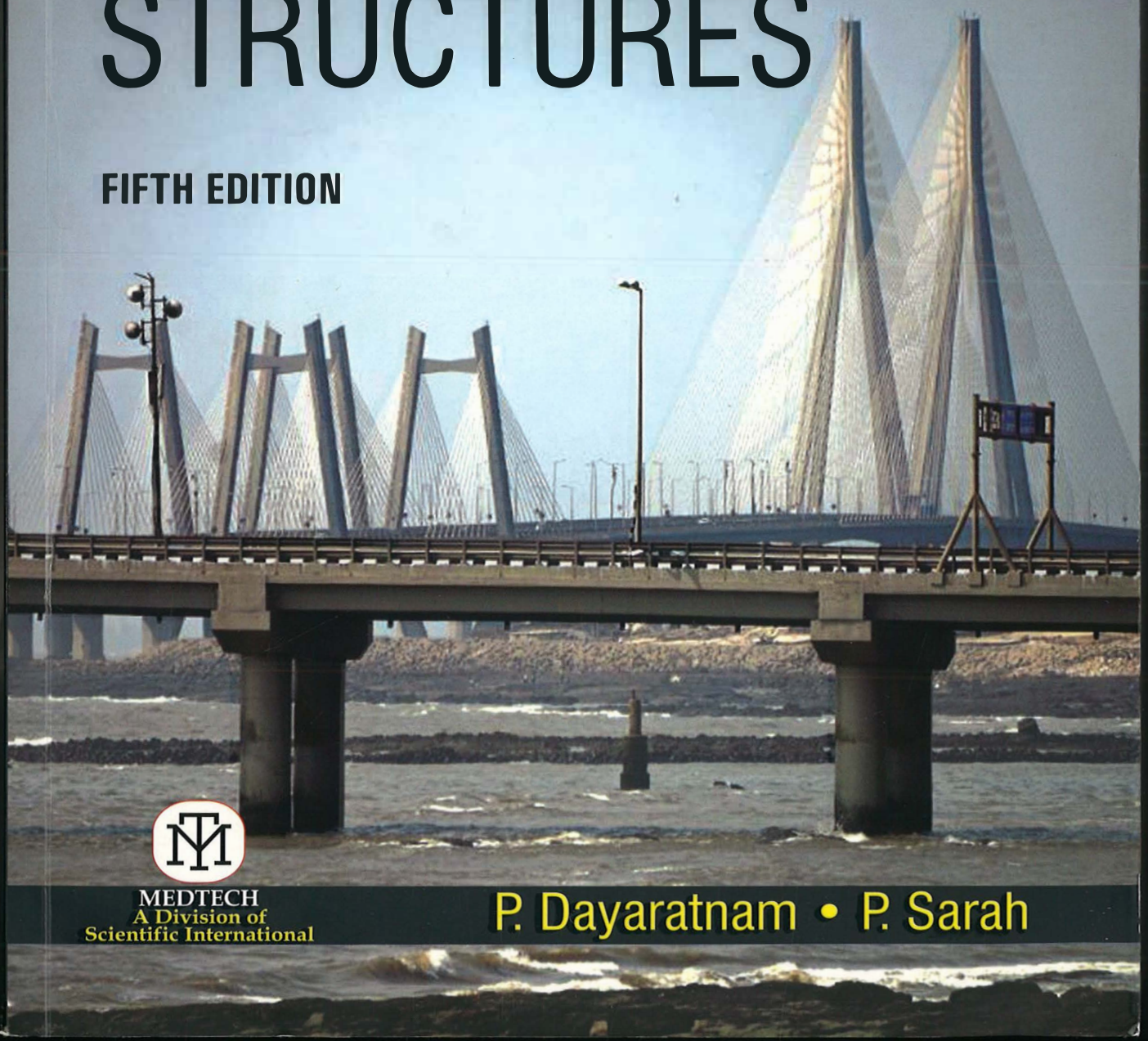
Dr. P. Sarah
Professor of Physics and Dean, R&D
Vardhaman College of Engineering
Hyderabad, India

MEDTECH
A Division of Scientific International
Engaging Sciences—Developing Minds!

Contents

Design of REINFORCED CONCRETE STRUCTURES

FIFTH EDITION



MEDTECH
A Division of
Scientific International

P. Dayaratnam • P. Sarah

Design of REINFORCED CONCRETE STRUCTURES

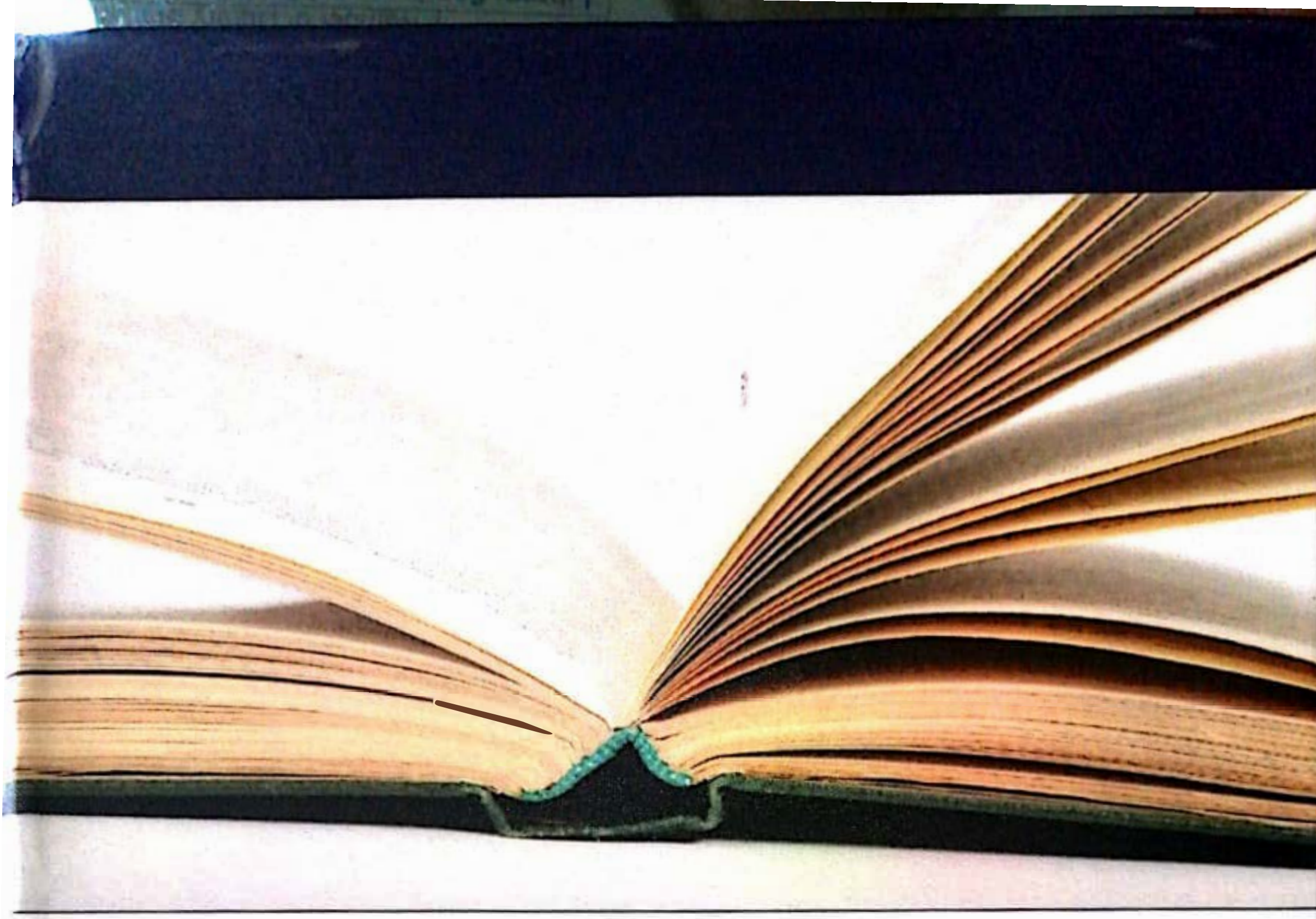
FIFTH EDITION

P. Dayaratnam
Formerly Professor and head of Civil Engineering
Formerly Dean of Research and Development
Indian Institute of Technology, Kanpur
Formerly Vice Chancellor, J.N.T. University, Hyderabad, India

Dr. P. Sarah
Professor of Physics and Dean, R&D
Vardhaman College of Engineering
Hyderabad, India

MEDTECH
A Division of Scientific International
Engaging Sciences—Developing Minds!

Contents



P. Srinivasulu

A Survey of Medical College Libraries in Andhra Pradesh, India

Medical Librarianship & Academic Library System

LAP LAMBERT Academic Publishing

Imprint

Cover image: www.ingimage.com

Publisher:
LAP LAMBERT Academic Publishing
is a trademark of
International Book Market Service Ltd., member of OmniScriptum Publishing Group
17 Meldrum Street, Beau Bassin 71504, Mauritius

Printed at: see last page
ISBN: 978-613-9-87501-6

Zugl. / Approved by: Tirupati, Sri Venkateswara University, 2008

P. Srinivasulu

A Survey of Medical College Libraries in Andhra Pradesh, India

Medical Librarianship & Academic Library System

LAP LAMBERT Academic Publishing

CONTENTS

Medical education occupies a crucial position as it involves a close and deep study of life itself and its vital process. It is no more a study of human illness and cure but a comprehensive body of knowledge dealing with health, and hence the productivity and well-being of the citizens. There is a growing awareness of the role of health development as a vital component of socio-economic development. In this direction, library is the fountain of knowledge that never runs dry. Libraries are the centres of learning and service oriented institutions. The medical science library is one of the several major resources that ensure the smooth flow of information to help improve the quality of health education, research and patient care. Most of the library surveys were conducted on public and academic libraries. Only a few studies have been conducted on medical college libraries. Hence, the present investigation has been undertaken to survey medical college libraries in A.P., India. With the views expressed by the respondents in survey, viable way to improve the existing library services and for creating new vistas in the proper development of the library in the optimal way are suggested.

Dr. P. Srinivasulu is currently working as Librarian at Vardhaman College of Engineering (Autonomous), Hyderabad, India. He has 15 years of Research, Teaching and Administrative experience at the College level. He has more than 20 research papers published in various journals and conference proceedings at both National and International level.

978-613-9-87501-6

Cloud computing gives an opportunity to use Internet-based services by business organizations. Use of cloud infra structure will reduce start-up costs, lower capital expenditures for organizations. Organizations use cloud services on a pay-as-you-use basis, access applications only as needed, and quickly reduce or increase capacities. Security is a major concern for data stored on cloud.Security to the data and applications is provided by authorization and authentication. Authorization for accessing the data is provided by access control models.Traditional access control models are not sufficient to cater applications running on cloud due to its dynamic nature. Various attribute based access control models are proposed for cloud computing. This book discusses the various authorization security challenges and proposed attribute based access control models to ensure security. The authors discuss the extremely challenging topics of data ownership, privacy protection, majorly focuses on encryption based access control models. This book is mandatory reading for research scholars, students involved in security aspects of cloud computing.

Having functional experience of cloud computing, Bigdata Research and Education Management for more than 15 Years. Currently working as Associate Professor in the Dept of CSE, Vardhaman College of Engineering, Hyderabad. India. Pursued PhD in CSE with cloud computing as major. Published articles in various international journals and conferences.

978-620-0-11334-4

Access Control Models cloud computing

Aluvalu, Muddana

Dr.Rajanikanth Aluvalu
Dr. lakshmi Muddana

Access control models for cloud computing

Privacy,Security and Trust in Cloud Computing

LAP LAMBERT Academic Publishing

Contents

The contents of this book represent a series of lectures given in the engineering level class on cloud Computing. We have great pleasure in presenting the First edition of this book. "CLOUD COMPUTING PARADIGM" is a core subject for B-Tech, BE, BSc, MCA, BCA and Diploma Students for interring the computer technology. This book is primarily intended to serve as a textbook in according with syllabus of Cloud Computing offered by various universities in India as well as abroad. Cloud Computing is a movement started sometime during the middle of the first decade of the new millennium; the movement is motivated by the idea that information processing can be done more efficiently on large farms of computing and storage systems accessible via the Internet The authors have identified the problems of the student "level" in this book, a significant effort has been made to find simple ways to develop theoretical as well as Practical of Fundamentals of Cloud Computing.

Prof.(Dr.) Raman Dugyala, B.Tech,M.Tech,PhD,Presently working in Vardhaman College of Engineering Telangana State India, Patent published 06,Having DST Projects worth 1 Crore. Prof.(Dr) Beg Raj, Principal, AITM Engineering Institute, Varanashi,UP,India. Prof.(Dr) Yashpal Singh, Professor & Dean Sree Chaitanya College of Engineering, TS, India.

978-620-0-09288-5

Advance Cloud Computing

Prof. (Dr) Yashpal Singh
Prof. (Dr) Raman Dugyala
Prof. (Dr) Beg Raj

Cloud Computing Paradigm

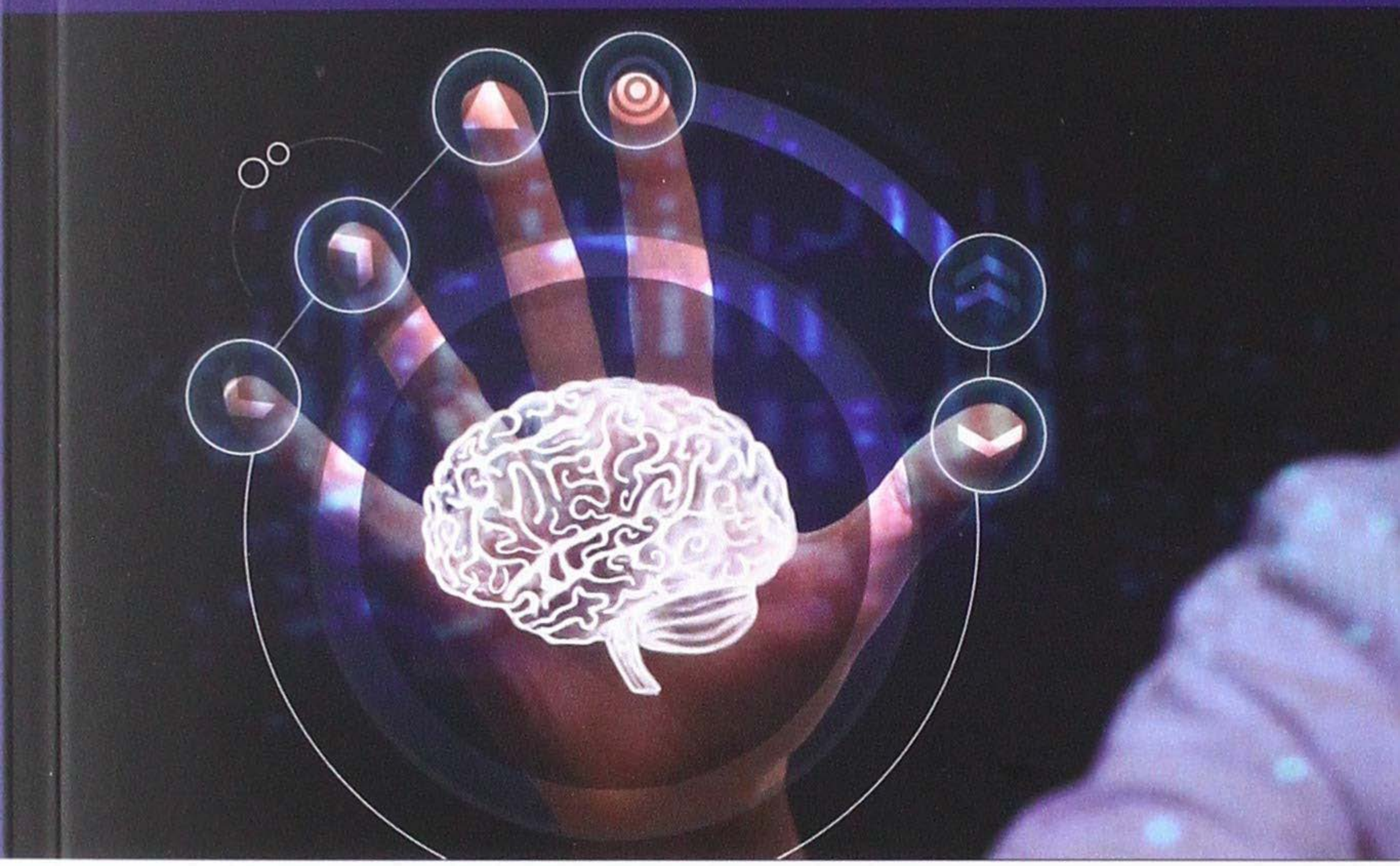
A complete Reference book

LAP LAMBERT Academic Publishing

Singh, Dugyala, Raj

A WAY TO CYBERTHON

Dr. S. Shitharth
Dr. M. Saravanan
Dr. S. Venkatesan
Mrs. K. Sangeetha



Akhil Jabbar Meerja
BL Deekshatulu

Heart Disease Data Classification using Data Mining Techniques

LAP LAMBERT Academic Publishing

This book is an essential reference work for academicians, professionals, researchers, and students interested in the relationship between data mining and medical database. This book offers an overview of machine learning technologies and evolutionary techniques in decision support systems for the diagnosis of heart disease based on medical data. Data collected from various hospitals were selected and preprocessed for this study. These techniques are used to explore risk factors associated with heart disease. This book also covers state-of-the-art research toward developing a decision support system for heart disease prediction with machine learning approaches. The book presents numerous techniques, algorithms, and models. It describes neural networks, evolutionary techniques like genetic algorithms, associative classification, and statistical models, and machine learning approaches for heart disease prediction. We discussed how these machine learning techniques are used to classify heart disease data sets.

Dr. M.A.JABBAR is a Professor, Dept of CSE at, Vardhaman College of Engineering, Hyderabad, India. He has been teaching for more than 19 years. He obtained his Ph.D. from JNTUH. He is serving as a vice chair of the IEEE Computer Society chapter (Hyderabad) Section. He received the best faculty researcher award from CSI and Fossee labs Mumbai.

978-613-9-46428-9

Digital India

A road ahead

Edited by

Dr. Tazyn Rahman

Digital India – A road ahead

EMPYREAL PUBLISHING HOUSE
Guwahati

Digital India – A road ahead

Edited By:
Dr. Tazyn Rahman
Associate Professor & Head Scholar's Program
Institute of Management Studies,
Noida

First Impression: 2017

Digital India – A road ahead

ISBN : 978-81-930928-0-4

Rs. 550/-

Published by:
Empyreal Publishing House
Guwahati, Assam
Mobile No: 9999817591
Email: info@editedbook.in

PREFACE

India is now one of the fastest growing economies in the world. *India* is progressing with a lightning speed. In this progress technology is playing a vital role and with the Digital India Project being introduced under the governance of Prime Minister Narendra Modi, India is all set to go Digital. Digital India is a campaign launched to achieve the ultimate goal of 'inclusion of everyone' and to ensure that Government services are made available to citizens electronically by improving online infrastructure and by increasing Internet connectivity or by making the country digitally empowered. This campaign will also act as a facilitator for Right to Information which is mandated by the constitution of India, as the same right includes facilities to be provided for the purpose of accessing information. The vision of Digital India program is inclusive growth in areas of electronic services, products, manufacturing and job opportunities etc. and it is centered on three key areas – Digital Infrastructure as a Utility to Every Citizen, Governance & Services on Demand and Digital Empowerment of Citizens.

Digital India- A road ahead is a compilation of 24 chapters which includes articles, research and conceptual papers contributed by various academicians and research scholars. The theme of the book is kept keeping in view the present scenario where India is entering a new phase of Digitization.

The book is devoted to examining some key dimensions of degititalization. It throws light on various aspect of digitalization like E- Services, E – Marketing, E – Retaling and Digital Library. This book tries to open up an enchanting window on how digitalization in various areas is being implemented and what are the challenges that are being faced while implementing the same. The chapters contributed for this book have been clubbed into 6 major sections:

Part – 1: Digital India

Part – 2: E – Services

Part – 3: E – Commerce

Part – 4: E – Marketing

Part – 5: E - Retailing

Part – 6: Digital Library

The purpose of this book is to bring forth the various aspects of digital India. We hope that this book will be helpful for students, researchers, corporate fraternity and all stakeholders of Digital India.

October, 2017 **Dr. Tazyn Rahman**
Ghaziabad

Acknowledgement

This compilation is an outcome of the efforts and hard work put in by the contributors, whose papers provide richness of content to this book. I convey our sincere thanks to all the authors who have contributed their papers.

Word fails to express my indebtedness for the cooperation and generous support of my spouse Mr Akhter Alam and my son Irfan Alam who lost my attention during the entire period of working on this book. In fact, they are my strength and the will power behind to work harder and harder.

I am obliged to Mr. Zahir Ahmed and Mr. Arvind Kumar of Empyreal Publication House for publishing this book in a very short duration.

Without the active involvement and support of all those mentioned above, this volume would not have been possible.

Last but not the least I bow my head to the Almighty who always gave me the strength to move on in life on the right path.

Dr. Tazyn Rahman

LIST OF CONTENTS

Part – 3: E - Commerce

Part – 4: E - Marketing

Part – 5: E - Retailing

Part – 6: Digital Library

Part - 1

Digital India

CHALLENGES AND OPPORTUNITIES OF DIGITALIZATION INDIA

Y Prakash and Y Sagarika

ABSTRACT

Digital India initiative aims at reaching the unreached through broadband highway, universal access to mobile connectivity, public internet access programme. Digitalization of business and delivery of services leads to ease of access, transparency and reduction in transaction cost such as e-Governance, e-Kranti-Electronic delivery of services. The digitalization creates IT jobs for the skilled youth results in income level that contribute to economic growth. Infrastructure play a vital role for electronic manufacturing to target zero imports by 2020. Advancement in ICT technologies leads to greater benefits to the citizen engagement with government. The Government needs technological partners who can provide integrated facilities like cloud storagefor huge data, data analytics, integration of technologies with business enterprises and governmentare need of the hour. Digitalization provides efficient services in agriculture, education, and healthcare, Banking, Financial Service and Insurance.Introduction of ICT in Agriculture such as e-NAM, NeGP can input farmers on soil test, seeds, nutrients, pests, weather forecast, marketing of produce and to remove asymmetric information between buyers and sellers. The Opportunities in education provides quality and virtual education system to prevent dropouts, infrastructure development helps in installation and utilization of incubation centers for Research and Developmental activities. For example, RUSA like apps creates capable people and good citizen. Digitalization in Healthcare has greater advantage to the medical profession in research and development activities, track the patients'health records and telemedicine in rural areas allows the patients to access better healthcare, Government impetus such as incentivizing private players, digitalization in primary health centers creates awareness to access robust healthcare. ICT play a vital role in Banking, Financial Services and Insurance (BFSI). Apart from this broadband connectivity, penetration of smartphones at cheaper price are the need of the hour to make Digital India a success. Due to demonetization, there is huge increase in mobile apps such as BHIM app, wallets, usage of POS machine, banking applications for smooth banking transaction with less transaction cost. With advancement in mobile application, requirements of customer has created a threat to the theft of data due to cyberattack. This has to be address with a holistic policy on cybersecurity measures to protect the privacy of data. Integration of e-sign technologies can reduce the breach of data of costumers.

Keywords:Challenges of Digital India, Digital India, Opportunities of Digital India, e-governance, e-kranti.

INTRODUCTION

The National e-Governance Plan approved in 2006 has not ensured effective progress in electronics manufacturing and e-Governance in the country but has made a steady progress through Mission Mode projects and Core ICT Infrastructure[1]. In order to serve better to the citizens of the country the Government of India announced Digital India. The Digital India programme supports infrastructure and provides measures to ensure the citizens electronic services, manufacturing devices/products and job opportunities to empower them and create knowledge economy that promotes inclusive growth.

REVIEW OF LITERATURE

The author concluded that vision of digital India is a huge step to empower nation[2]. It is also said that implementation of nine pillars of the mission faced serious challenges in implementation Seema Dua (2017). The research highlights that increased digitalization reaped the gains in economies, societies and functioning of public sectors[3]. During 2011, Digitalization contributes to world economy an additional $193 bn. and 6million jobs worldwide. "Digitization creates jobs, with a 10 point increase in the digitization score leading to a 1.02 percent drop in the unemployment rate[4]". The new public governance approaches are required to be support a shift from citizen-centric approaches to citizen-driven approaches[5]. Improved service delivery and internal public sector efficiency should go hand-in-hand promotes economic growth, societal equality and good governance with greater transparency, integrity and citizen engagement, if not it results in economic and financial crisis.

RESEARCH METHODOLOGY

The data is secondary data collected from Journals, Magazine, Annual Reports, Recommendations of Councils, Web content of Government Organizations that relates to subject matter.

OBJECTIVE OF THE STUDY

1. To examine the concept of Digital India
2. To explore the various areas of Digitalization in India
3. To identify the opportunities in Digital India programme to tap the untapped opportunities.
4. To analysis the challenges that act as barriers to Digital India.
5. To describe the benefits of Digitalization in India that contributes to economic growth.

AIM OF DIGITAL INDIA

Digital India Programmes aims to support the thrust areas includes:

(1) **Broadband Highway:**It includes Broadband for All-Rural, Broadband for All-Urban, National Information Infrastructure (NII)[6].

(2) **Universal Access to Mobile Connectivity:** It focuses on network penetration and filling the gaps in connectivity in the country[7]. To provide access to the uncovered villages in a phased manner. There are about 55,619 villages in the country that does not have access to mobile connectivity.

(3) **Public Internet Access Programme:** The two sub components includes (Common Services Centres, Post Offices as multi-service centres) for delivery of government and business services[8].

(4) **e-Governance: Reforming Government Through Technology:** Government Process Re-engineering using IT to simplify and make the government processes more efficient is critical for transformation to make the delivery of government services more effective across various government domains and therefore needs to be implemented by all Ministries/ Departments[9].

The Guiding principles includes:(i) Form simplification and field reduction (ii) Online applications and tracking (iii) Online repositories (iv) Integration of services and platforms.

(5) **e-Kranti - Electronic Delivery of Services:** To Transform e-Governance and promote mobile Governance and Good Governance[10]. The Key Principle includes:

a) Transformation and not Translation
b) Integrated Services and not Individual Services
c) Government Process Reengineering to be mandatory in every MMP (Mission Mode projects)
d) ICT infrastructure on Demand
e) Cloud by Default
f) Mobile First
g) Fast Tracking Approvals
h) Mandating Standards and Protocols
i) Language Localization
j) National GIS (Geo-Spatial Information System)
k) Security and Electronic Data Preservation

(6) **Information for All:** Online Hosting of Information and documents to facilitate open and easy access to information for citizens.

(7) **Electronics Manufacturing:** To promote electronics manufacturing in the country with the target of **NET ZERO imports by 2020.**Inorder to attain NET Zero imports, the coordination is required at different levels[11]that includes:

- Taxation, incentives
- Economies of scale, eliminating cost disadvantages
- Focus on Mobiles, Set top boxes, Consumer & Medical Electronics, Smart Energy meters, Smart Cards, Micro-ATMs
- Incubators, Clusters
- Skill Development, Enhancing Ph.D.
- Government Procurement
- Safety Standards - Compulsory Registration, Support for Labs and MSMEs
- National Award, Marketing, Brand Building
- National Centers - Flexible Electronics, Security Forces
- R & D in Electronics

(8) IT for Jobs: It focuses on providing training to the youth in skills required for availing employment opportunities in the IT/ITES sector.

(9) Early Harvest Programmes[12]

The Early Harvest Programmes includes:

a) IT Platform for Messages

b) Government Greetings to be e-Greetings

c) Biometric attendance

d) Wi-Fi in All Universities

e) Secure Email within Government

f) Standardize Government Email Design

g) Public Wi-Fi hotspots

h) School Books to be eBooks

i) SMS based weather information, disaster alerts

j) National Portal for Lost & Found Children

DISCUSSION AND ANALYSIS

Indian telecom network is the second largest in the world after China[13].The country has 971.01 million telephone connections, including 944.01 million wirelesstelephone connections.Overall tele-density in the country is 77.59%.Urban tele-density is 147.75%, whereas rural tele-density is 46.14%.The share of wireless telephones in total telephones is 97.22%.The share of private sector in total telephones is 89.15%.Number of Broadband connections is 85.74 million.

The country has increased telephone connections[14]to 1036.57 million from 971.01 million, wireless telephone connections increased to 1011.05 million from 944.01 million. Tele-density in the country increased to 81.85% from 77.59%. The rural tele-density increased to 49.82% from 46.14%. The number of Broadband connections increased to 131.49 million from 85.74 million at the end of November 2015.

The country has increased telephone connections[15] to 1124.41 million from 1036.57 million, Wirelesstelephone connections increased to 1099.97 million from 1011.05 million. Tele-density in the country increased to 87.85% from 81.85%. The rural tele-density increased to 52.97% from 49.82%. The number of Broadband connections increased to 218.43 million from 131.49 million at the end of October 2016.

The change in telephone connections is 115.79%, Wireless telephone connection is 116.52% and broadband connections is 254.75% during 2014-15 to 2016-17. This percentage change in telecom indicators indicate that people are going forward to Digital India initiatives of Government of India.

Telecom Development Indicators

Sl. No.	Item		At the end of				
			March'14	March'15	March'16	December'15	November'16
1	Number of Telephones (In million)	Overall	933.02	996.13	1059.33	1036.57	1124.41
2		Wire line	28.50	26.59	25.22	25.52	24.44
3		Wireless	904.52	969.54	1034.11	1011.05	1099.97
4		Rural	377.78	416.08	447.77	434.23	465.20
5		Urban	555.23	580.05	611.56	602.34	659.22
6	Tele-density (Telephones per 100 persons)	Overall	75.23	79.36	83.40	81.85	87.85
7		Rural	44.01	48.04	51.26	49.82	52.97
8		Urban	145.46	149.04	154.18	152.57	164.13
9	%age share	Wireless	96.95	97.33	97.62	97.54	97.83
10		Public	12.87	10.07	10.26	10.12	10.42
11		Private	87.13	89.93	89.74	89.88	89.58
12	%age growth of Total Telephones – over previous year		3.90	6.76	6.34	6.75	8.47

Source: Government of India, Ministry of Communication and Information Technology, Department of Telecommunication, Annual Report 2016-17

The Table shows that percentage growth of total telephones over the years to 8.47 from 3.90 during March 2014 to November 2016.

"ERNET India has been focusing on addressing the ICT requirements of the highly deprived sections of the society like the rural and remote school children, farmers and the disabled[16]". The state-of-the art technologies promotes the Digital India success.

"As consumers evolve in parallel and demand wide-spread seamless connectivity, it is inevitable that the home will eventually become their major hubs of cohesion". One-third of all Indian respondents are early adopters of technology, potential for smart devices and services than any other country across Asia pacific that begins digital transformation at home. Business in India are optimistic with 41% ready to embrace the interoperability of services and applications[17]. There is an opportunities for the business to formulate unique strategies to improve services, brand value with affordable pricing competition.

"In a short span, Digital India has enabled the roll-out of many new projects and products, covering the entire spectrum of e-governance in the country[18]".

OPPORTUNITIES OF DIGITALIZATION

Rashtriya Ucchatat Shiksha Abiyan (RUSA) a unique and mobile app has launched Prakash Javadekar, Union HRD Minister in New Delhi that created 17 facilities in one go in 14 states to improve the quality of education to enable them create capable people and good citizens[19]. It enhances quality of education by improving smart classrooms, research lab infrastructure and other programmes to add value to the quality enhancement to students. The Ministry has increased the expenditure to the tune of Rs.2800cr and provided Rs.1300 in 2017-18 budget to create infrastructure in many universities, colleges and model colleges.

"There is a need for establishing POS Infrastructure and converting that into a profitable business case for merchants". Digitalization helps merchant-less and a presence-less banking[20]. eMudhra has been instrumental in setting up the e-sign technology as part of the Digital India programme. It has more than 100 large customers including banks and governments.

Sensors, mobile app, cloud service and intervention are the major components of a telemedicine solution in rural and semi-urban India to reduce the diagnostic costs, innovative device for Primary Health Centers[21].

Mobile technology will play a significant role in providing healthcare services, as per the report of PwC Indian growth in mHealth market will have revenue opportunity worth Rs.3000cr. and $23 bn. for the world by 2017[22]. PwC identifies factors for that lead to the growth of mHealth includes, Government should encourage the mHealth to improve access, affordability of healthcare and providing incentives to private service providers offering mHealth services. Regulators has to address the limitation and standardization in providing the mhealth services. Healthcare Industry along with Government support has to accept this

service in the medical profession. Finally, user adoption will drive the exponential growth and opportunity in the mHealth market that can happen backed by medical professionals, affordability and availability of content and devices.

According to Gartner, The IT spending on the Indian public sector, i.e., the central government, the state governments and local governments expected to reach $7.8 billion in 2017. The ERP, Supply chain management, CRM (Customer relationship management) and other applications tools expected to reach $1 billion in 2017 with a growth of 15.7per cent[23]. IT services includes business process outsourcing, consulting, hardware support, implementation and software support expected to reach $2 billion in 2017 with a growth of 14.6 percent.

Internet penetration in rural areas stood at 13 per cent at the end of December 2016.There are 55000 villages untapped by telecom industry Digital India aims to promote digital literacy, enhancing infrastructure and e-governance[24]. Increase in broadband penetration in rural areas leads to increase in income level, thus drive the GDP growth of India. The Telecom operators has to explore new business and service model to tap the untapped opportunities in the rural India to provide data access at lower price, device manufacture has to ensure that supply of handset at cheaper price.

There is a great impetus to the telecom operators due to growing need of voice to data. An In-building solution if offered can avoid loss of signal, power radiation should be high to macro sites to provide efficient services inside buildings as it accounts for 60-65 per cent of mobile usage[25]. The Telecom Operators has an investment opportunity of $2trillion in the next 30 years towards the Digital India and Smart Cities.

Telecom connectivity in rural areas empower nearly two-thirds of the population through Digital India and BharatNet that enhance rural service such as agricultural, education and healthcare sectors[26]. Digitalization empowers rural population in governance initiatives; generate new employment opportunities, e-banking, e learning.

The Government of India announced DigiGaon initiatives in the Union Budget 2017-18 aims to provide services using ICT applications in the fields of agriculture, digital payments, education, e-governance, Healthcare. The opportunities in the agriculture through e-agriculture with ICT intervention government introduced National e-Governance Plan (NeGP) to provide information on crops, farm machinery, nutrients, pests, seeds, soil health and weather to the farmers through CSCs, internet Kiosks and SMSs. electronic National Agriculture Market (e-NAM) has launched to remove information asymmetry between buyers and sellers[27]. So far, 13 States have joined e-NAM platform that provides information and services on commodity arrivals and prices, trade offers, material flows and brings transparency in auction process. This helps in tracking of actual demand and supply, reduces the transaction costs.

In 2014, a study conducted by Government revealed that nearly 60 percent of students in rural areas lacks reading skills and ability to solve simple mathematical problems at the age of 10. Nearly 50 percent of dropouts at the age of 14 to the existing above problems. Use of ICT solutions to provide virtual classroom in rural areas on soft skill courses on computer literacy and hardware software solutions[28]. A Massive Open Online Courses has planned to the students to pursue courses of their choice from any institution across the country.

CHALLENGES TO DIGITAL INDIA

The challenges to the Government enterprises in managing ICT includes network downtime, lack of qualified IT staff to oversee day-to-day IT operations, integration of multiple technologies, need for timely upgradation of systems and increasing cost of technologies[29]. One of the major challenge the government enterprises face is threat of information security.

Due to growth from voice to data, the telecom operators need to invest in an efficient mobile backhaul networks to ensure voice and data connectivity[30]. Fiber infrastructure in India is about 20 per cent sites compared to developed countries is a bottleneck in rendering quality data services.

Some of the Countries such as Malaysia, US, China and UK has considered significance of telecom services as a tool for driving socio-economic development[31]. In the similar lines, the Government of India has to

support the Telecom Infrastructure in rural areas through some incentives, regulatory policies and effective measures to bridge the digital divide between rural and urban areas.

m-Kisan portal provides information and advisories services on agricultural and allied sectors by central and state government organization to farmers through SMSs in preferred language[32]. In order to reach to all sections of farmers the need of the hour is to create awareness through local bodies to uneducated farmers.

Digital payment has increased after demonetization of high currency and measure taken by Government of India towards "less -cash" society[33]. Efforts of Government of India on BHIM (Bharat Interface for Money) app created much awareness on urban areas but a challenge is on low smartphone penetration, banking infrastructure and internet connectivity in rural areas.

The Banking, Financial Services and Insurance enterprises have major risk from cyberattack. Security is concern in a technology-based network of financial environment as it contains information about businesses and customer[34]. With the increase in online transaction, there is a threat to theft of consumer data. Increase in consumer expectations poses another challenge for effective implementation of core banking solutions in a transparency and responsive manner. Change in the customer requirements and technological advancement has led the banks to integrate technology at the enterprise level has become a challenge task.

National Cyber Security Policy in 2013 was the first broad policy on cybersecurity has developed with increase in incidents of cybersecurity breaches. Some of the Institutes has created awareness of cybersecurity infrastructure at their business environment such as RBI, SEBI, IRDA and Adhaar Act 2016 for the safety and security of Aadhaar numbers and other core biometric details. "Enterprises should move away from a simple "buy-and-deploy approach for cybersecurity and adopt solutions that address their specific industry security profile, business context, risk appetite and threat profile".

The challenges faced by healthcare providers include high cost of diagnostic equipment and lack of trained professionals to provide medical services.

CONCLUSION

Digital India initiatives of the Government of India has certain opportunities due to digitalization of e-governance services to the citizen maintains transparency, prevention of corruption, record maintenance at affordable cost with efficiency. There are good number of opportunities in terms of agriculture, Banking, Finance Insurance and services, healthcare. ICT integration of all these sectors with partner ensures the specific sectorial benefits of digitalization. Employment opportunities to the Youth in IT and ITES in customer relationship management, product development, enterprise resource planning, cloud computing storage services, mobile application development, and data analytics enhance the income level contributes to GDP of the country. There arises challenges with the opportunities includes broadband connectivity, device manufacturing, smartphone penetration, safeguard of application from cyberattack through a holistic framework on cybersecurity policy to dealt with theft of data of consumers, business entities. Government impetus to the private players in the field of mhealth, tele medicine, e-agriculture, infrastructure development can overcome the challenges to empower the citizen to acquire knowledge economy and engage with the government for effective consumer service. The Central Government, State Governments and Local Governmental bodies has to create awareness among citizens on the use of digitalization can results in achieving the aim of the Digital India i.e., empower citizen to knowledge economy and engage citizen-government in an efficient and effective manner with automation.

REFERENCES

1. Government of India, Press Information Bureau, "Digital India – A Programme to transform India into digital empowered society and knowledge economy", 20 August 2014, p.4.
2. Seema Dua (2017), "Digital India: Opportunities & Challenges", International Journal of Science Technology and Management, Vol. 6, Issue 3, March 2017, p.6.
3. Bahjat El-Darwiche et.al. (2013), "Digitization for economic growth and job creation", Strategy &, Booz & Company, Retrieved from https://www.strategyand.pwc.com/media/file/Digitization-for-economic-growth-and-job-creation.pdf Accessed on 10 August 2017. p.6

4. OECD Council (2014), Public Governance and Territorial Development Directorate, "Recommendation of the Council on Digital Government Strategies", 15 July 2014, p.4
5. Government of India, Ministry of Electronics & Information Technology, Digital India – Broadband Connectivity, Retrieved from http://www.digitalindia.gov.in/content/broadband-highways, Accessed on 08 August 2017.
6. Government of India, Ministry of Electronics & Information Technology, Digital India – Universal Access to Mobile Connectivity, Retrieved from http://www.digitalindia.gov.in/content/universal-access-mobile-connectivity, Accessed on 08 August 2017.
7. Government of India, Ministry of Electronics & Information Technology, Digital India – Public Internet Access Programme, Retrieved from http://www.digitalindia.gov.in/content/public-internet-access-programme, Accessed on 08 August 2017.
8. Government of India, Ministry of Electronics & Information Technology, Digital India – E-Governance – Reforming Government Through Technology, Retrieved from http://www.digitalindia.gov.in /content/e-governance-%E2%80%93-reforming-government-through-technology, Accessed on 08 August 2017.
9. Government of India, Ministry of Electronics & Information Technology, Digital India – Ekranti Electronic Delivery of Services, Retrieved from http://www.digitalindia.gov.in/content/ekranti, Accessed on 09 August 2017.
10. Government of India, Ministry of Electronics & Information Technology, Digital India – Electronics Manufacturing, Retrieved from http://www.digitalindia.gov.in/content/electronics-manufacturing, Accessed on 09 August 2017.
11. Government of India, Ministry of Electronics & Information Technology, Digital India – Early Harvest Programmes, Retrieved from http://www.digitalindia.gov.in/content/early-harvest-programmes, Accessed on 09 August 2017.
12. Government of India, Ministry of Communications & Information Technology, Department of Telecommunications, Annual Report 2014-15,p.7
13. Government of India, Ministry of Communications & Information Technology, Department of Telecommunications, Annual Report 2015-16,p.7
14. Government of India, Ministry of Communications & Information Technology, Department of Telecommunications, Annual Report 2016-17,p.6
15. S. Sadagopan and N. Mohanram, "Foundational IT projects from yore – ERNET powering today's Digital India", Voice&Data, June 2017, p.27
16. Dinesh Verma (2017), "India leads into the Digital Cohension era", Voice&Data, Vol. 24, Issue 6, June 2017, pp.32-33
17. P.P. Chaudhary(2017), Convergence India 2017, "India is taking gaining strides to emerge as a digital economy", Tele.net, Vol. 18, Issue 2, February 2017, p.39
18. "Prakash Javadekar launches portal, mobile app of RUSA", Voice&Data, Vol. 24, Issue 5, May 2017, p.49
19. "Digitising Payments Emerging landscape for cashless transactions", tele.net, Vol. 18, Issue 3 March 2017, pp.40-41
20. Anusha Ashwin (2017), "Redefining telemedicine dynamics", Voice&Data, Vol. 24, Issue 5, May 2017, pp.31-32.
21. Siddharth Vishwanath, Pwc India, "mHealth will be a Rs.3000 cr. opportunity", Voice&Data, Vol. 24, Issue 5, May 2017, pp.34-35.

22. Puneet Kumar Arora (2017), "Governance 2.0 ICT to transform citizen-government interaction", tele.net, Vol. 18, Issue 5, May 2017, pp.26-27.
23. Untapped Opportunity Shift in Industry attention from saturating urban markets to rural users, tele.net, Vol. 18, Issue 6, June 2017, pp.58-59
24. Surajit Khan (2017), "Growth Impetus – Key trends in the telecom infrastructure space", tele.net, Vol. 18, Issue 6, June 2017, p.74
25. T.R.Dua (2017), "Building Bridges – Steps to close the rural-urban digital divide", tele.net, June 2017, p.66
26. "Digital Makeover ICT applications in rural areas", tele.net, Vol. 18, Issue 6, June 2017, pp.64-65
27. Puneet Kumar Arora (2017), "Governance 2.0 ICT to transform citizen-government interaction", tele.net, Vol. 18, Issue 5, May 2017, pp.26-27.
28. Surajit Khan (2017), "Growth Impetus – Key trends in the telecom infrastructure space", tele.net, Vol. 18, Issue 6, June 2017, p.74
29. T.R.Dua (2017), "Building Bridges – Steps to close the rural-urban digital divide", tele.net, Vol. 18, Issue 6, June 2017, p.66.
30. "Digital Makeover ICT applications in rural areas", tele.net, Vol. 18, Issue 6, June 2017, pp.64-65
31. Ibid.,
32. Punit K (2017), "Banking on ICT BFSI players update their technological architecture for better service delivery", tele.net, Vol. 18, Issue 6, June 2017, p.51.
33. G.V.A Dharanan (2017), "Combating Cybercrime Evolving information security framework to check data breaches", tele.net, Vol. 18, Issue 6, June 2017, pp.24.
34. Anusha Ashwin (2017), "Redefining telemedicine dynamics", Voice&Data, Vol. 24, Issue 5, May 2017, pp.31-32.

About Contributors

Mr. Y Prakash is Assistant Professor, Department of MBA at Vardhaman College of Engineering (Autonomous), Shamshabad, Hyderabad, Telangana State, India. He has close to 6 Years of experience in academics. He is Research Scholar, School of Management Studies at JNT University Kakinada, Kakinada.

He received the MBA Degree with Specialization in Human Resource and Finance from Vivekananda College of Computer Sciences, Osmania University, Andhra Pradesh, India and B. Com (Computers) degrees from Badruka College of Commerce, Osmania University, Andhra Pradesh, India in 2010 and 2008, respectively.

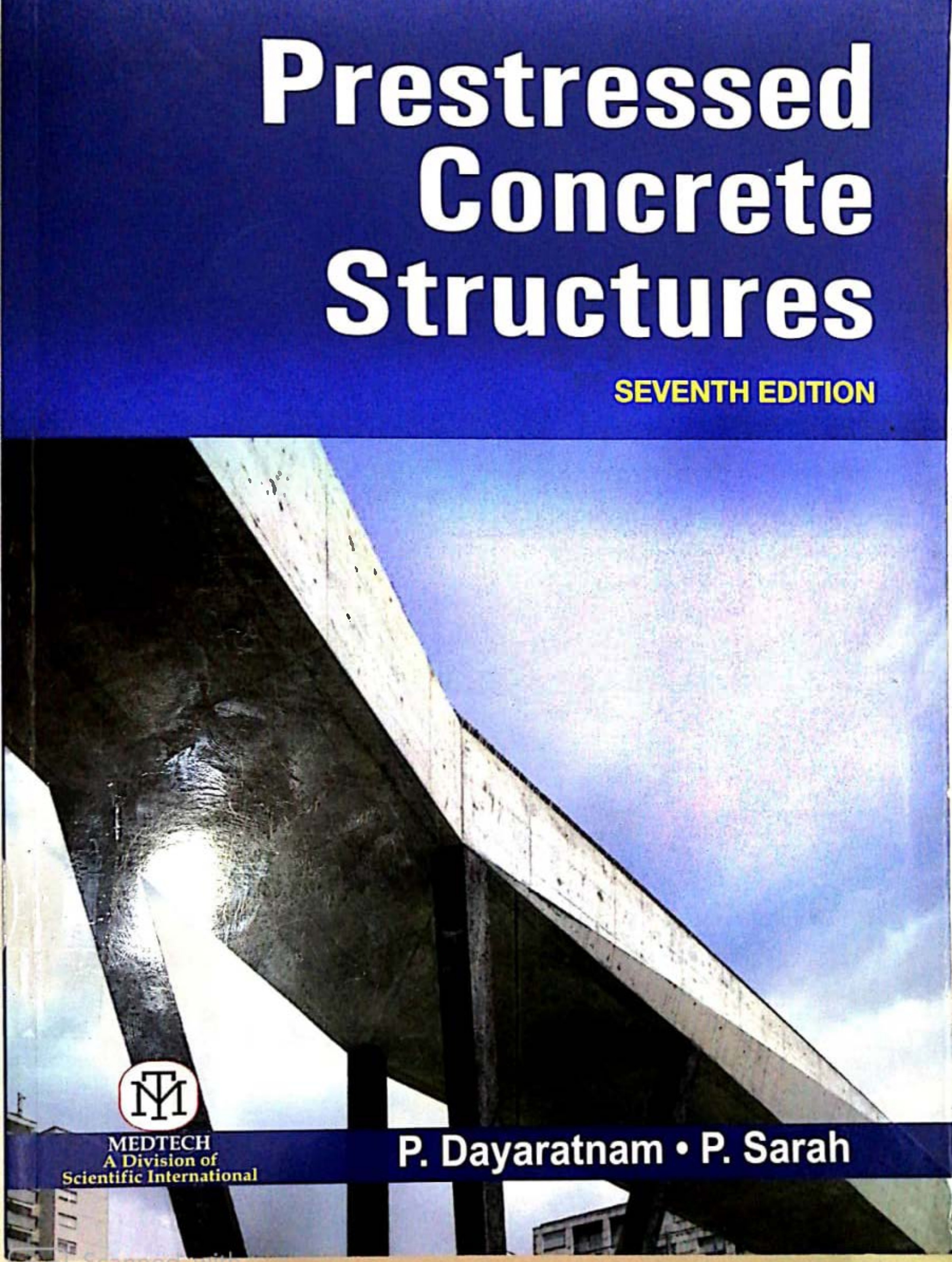
He got qualified for Lectureship with 68% in UGC-NET June 2013 in Labour welfare/Personnel Management/Industrial relations/Labour and social welfare.

Ms. Y Sagarika is Assistant Professor, Department of MBA at Sri Indu Institute of Engineering and Technology, Ibrahimpatnam, Telangana State, India. She has 2 Years of experience in academics and 2 Years in Industry.

He received the MBA Degree with Specialization in Human Resource and Marketing from Vivekananda College of Computer Sciences, Osmania University, Andhra Pradesh, India and B. Sc. degrees from Sri Vani Womens Degree College, Osmania University, Andhra Pradesh, India in 2010 and 2008, respectively.

Prestressed Concrete Structures

SEVENTH EDITION



MEDTECH
A Division of
Scientific International

P. Dayaratnam • P. Sarah

Prestressed Concrete Structures

SEVENTH EDITION

P. Dayaratnam
Formerly Professor and head of Civil Engineering
Formerly Dean of Research and Development
Indian Institute of Technology, Kanpur
Formerly Vice Chancellor, J.N.T. University, Hyderabad, India

Dr. P. Sarah
Professor of Physics and Dean, R&D
Vardhaman College of Engineering
Hyderabad, India

MEDTECH
A Division of Scientific International
Engaging Science—Developing Minds!

Contents

CIVIL ENGINEERING

Prestressed Concrete Structures

The book is designed to serve as the first course for civil engineering students and a guide to design engineers. It is an outcome of more than 25 years of teaching of the subject to IIT Kanpur students and experience of field problems. Three basic methods of design, namely Working Stress Design (WSD), Limit State Design (LSD) and Ultimate Strength Design (USD) which are in practice are dealt with. The Limit State Design being the latest, very extensive presentation of the method applied to fully and partially prestressed concrete structures is made. An introduction to the probability failure analysis leading to the limit state concepts is illustrated along with some statistics of observations. Full and partial prestress designs based on the latest codes of practice are explained with a number of examples on variety of elements, such as beams, ties, columns, slabs, shells and bridges. Detailed design examples on minimum weight design of beams is presented to enable the students and designers to look for rational solutions. Cost analysis of components of materials and formwork in beams is illustrated. Some of the key features of the book are:

1. Discussion on limit state design of full and partial prestressed concrete beam.
2. Detailed examples of design of small to long span beams, water tanks, cylindrical shells, folded plates, domes and bridges are illustrated.
3. Latest codes of practice are incorporated and comparison of the designs based on different methods and illustrated.
4. Economical analysis and the influence of design variable and methods on cost are discussed.
5. Useful design aids for beams, cylindrical shells are given in appendices.
6. A set of objective questions which will enable a student or an engineer to find most rational solutions and concepts are listed in the appendix.

Dr. Pasala Dayaratnam, Ph.D. (1962) in Civil Engineering, University of Colorado, Boulder, USA joined IIT Kanpur in 1965 after teaching at Andhra University, Waltair with brief experience in Andhra Pradesh PWD. He taught variety of subjects at undergraduate and postgraduate levels both at Andhra University and at IIT Kanpur for about 30 years, guided research students and a number of sponsored research projects. He has been a consultant in design of complex industrial structures, tall buildings, towers, bridges and shell structures. As a member of Bureau of Indian Standards Committees, he is associated with development of many codes of practice in structural engineering. He has experimented on teaching methods, evaluation procedures and testing sequences. He authored nine textbooks in structural engineering, 110 research papers and about 150 reports on design, testing and evaluation. Dr. Dayaratnam is a recipient of awards during his entire student career from high school to Ph.D. level and some of his research publications have also won awards.

Dr. Pasala Sarah, Professor and Dean R&D, Vardhaman College of Engineering, is an accomplished academician with over 20 years of teaching experience blended with additional experience in Research & Administration. The Research experience includes execution of projects from DRDO, BARC in identifying materials for different needs of the Industry. The administrative experience includes Vice Principal, Dean and Head Portfolios in large Engineering College of over 2500 students. Dr. Sarah has published over 50 Papers in International and National Journals and Conferences and has organized International and National Conferences on Nanomaterials, Nanotechnology and Composite Materials. Dr. Sarah has written 4 Text books. Dr. Sarah has unique experience of blending her core competency of Materials with modern technological practices which will enable the students to Innovate, Adapt to change and Adopt to the new technologies.

Brief Contents:

Materials Concrete and Prestressed Concrete Structures • Prestressing System and Losses of Prestress • Working Stress Design of Simple Beams • Prestressed Concrete Composite Beams • Continuous Beams • Miscellaneous Structural Members • Limit States Design of Beams • Ultimate Load Design of Prestressed Concrete Beams • Limit State Design of Partially Prestressed Concrete Beams • Design of Prestressed Concrete Slabs • Design of Folded Plates and Shell Structures • Bond in Prestressed Concrete • Anchorage of Prestressing Cables • Some Point of Interest in Prestressed Concrete Construction • Design of Prestressed Concrete Bridge.

MEDTECH
A Division of Scientific International
Website: www.siplind.com

Price: ₹ 495.00

9 789386 479778

ISBN: 978-93-86479-77-8

Brick and Reinforced Brick Structures

P. Dayaratnam
P. Sarah

Including MCQs

SECOND EDITION

MEDTECH
A Division of
Scientific International

Brick and Reinforced Brick Structures

SECOND EDITION

P. Dayaratnam
Formerly Professor and head of Civil Engineering
Formerly Dean of Research and Development
Indian Institute of Technology, Kanpur
Formerly Vice Chancellor, J.N.T. University, Hyderabad

Dr. P. Saran
Professor of Physics and Dean, R&D
Vardhaman College of Engineering
Hyderabad, India

MEDTECH
A Division of Scientific International
Engaging Sciences—Developing Minds!

CONTENTS

CIVIL ENGINEERING

Brick and Reinforced Brick Structures

Brick and brick masonry is one of the most durable and widely used building and structural materials. This book has been developed not merely as a textbook for students but also as a guide to designers and builders. The book incorporates feedback from students while a course on structural design was taught, experience in testing of materials at the IIT Kanpur, and author's design expertise as a consultant. Many brick buildings have been analysed and their statistics have been presented. A certain amount of research component based on a sponsored project from the Department of Science and Technology, New Delhi has been added to enable engineers to get more depth in the subject. The first two chapters are an introduction to the properties of bricks, mortar and masonry. The histograms and statistical analyses give an insight of the chapter of brick and brick masonry in some parts of India. The third chapter presents the design of load-bearing brick walls and columns, and design of retaining walls. Design of reinforced brick slabs and beams is presented in chapter four. Some problems associated with reinforced brick construction have also been highlighted.

Dr. Pasala Dayaratnam, Ph.D. (1962) in Civil Engineering, University of Colorado, Boulder, USA joined IIT Kanpur in 1965 after teaching at Andhra University, Waltair with brief experience in Andhra Pradesh PWD. He taught variety of subjects at undergraduate and postgraduate levels both at Andhra University and at IIT Kanpur for about 30 years, guided research students and a number of sponsored research projects. He has been a consultant in design of complex industrial structures, tall buildings, towers, bridges and shell structures. As a member of Bureau of Indian Standards Committees, he is associated with development of many codes of practice in structural engineering. He has experimented on teaching methods, evaluation procedures and testing sequences. He authored nine textbooks in structural engineering, 110 research papers and about 150 reports on design, testing and evaluation. Dr. Dayaratnam is a recipient of awards during his entire student career from high school to Ph.D. level and some of his research publications have also won awards.

Dr. Pasala Sarah, Professor and Dean R&D, Vardhaman College of Engineering, is an accomplished academician with over 20 years of teaching experience blended with additional experience in Research & Administration. The Research experience includes execution of projects from DRDO, BARC in identifying materials for different needs of the Industry. The administrative experience includes Vice Principal, Dean and Head Portfolios in large Engineering College of over 2500 students. Dr. Sarah has published over 50 Papers in International and National Journals and Conferences and has organized International and National Conferences on Nanomaterials, Nanotechnology and Composite Materials. Dr. Sarah has written 4 Text books. Dr. Sarah has unique experience of blending her core competency of Materials with modern technological practices which will enable the students to Innovate, Adapt to change and Adopt to the new technologies.

Brief Contents:

Materials and manufacturing of bricks • Statistical analysis of properties of brick, mortar and masonry • Design of brick walls • Design of reinforced brick masonry beams and slabs.

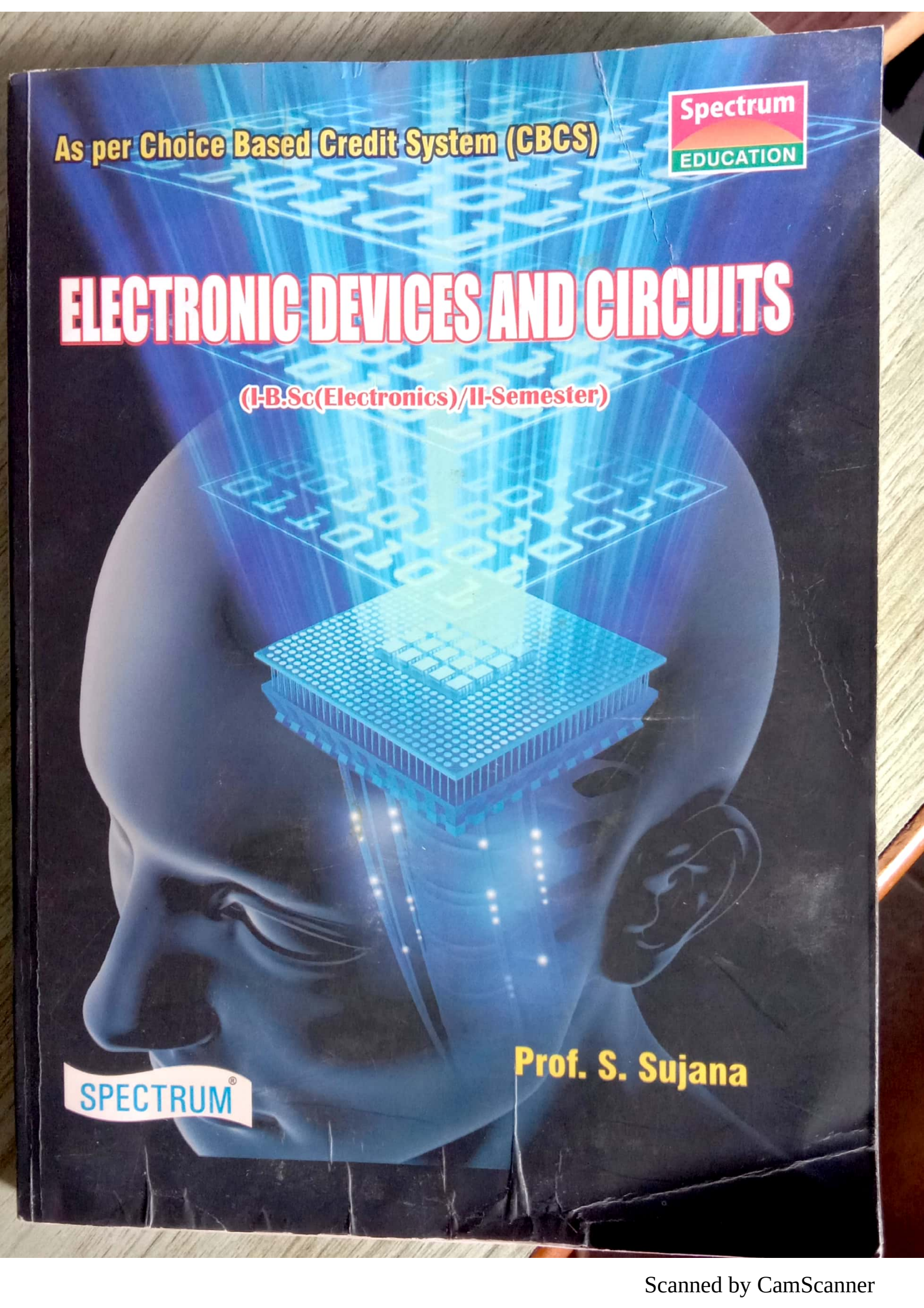
Price: ₹ 395.00

As per Choice Based Credit System (CBCS)

Spectrum EDUCATION

ELECTRONIC DEVICES AND CIRCUITS

(I-B.Sc(Electronics)/II-Semester)



Prof. S. Sujana

SPECTRUM®

Spectrum University Press, Hyderabad

A Part of StudentsHelpline Publishing House (P) Ltd. , Hyderabad

(An ISO 9001 : 2015 Certified Company)

Head Office

326/C, I[st] Floor, Surneni Nilayam
Near B K Guda Park, S R Nagar, Hyderabad - 500 038, INDIA
P.No:+91 40 23710657, 238000657 Fax: +91 40 23810657

Reg. Off

5-68, Pedda Gorpadu, Pakala, Tirupati, Chittoor - 517 112 AP, INDIA
mail:studentshelpline.in@gmail.com
www.**studentshelpline.**in

First Edition-2018

ISBN 978-93-83640-43-0

` **224/- Student Edition with PB**

` **424/- Student Edition with HB**

Printed at StudentsHelpline Group, S R Nagar, Hyderabad-38
Published by Surneni Mohan Naidu for Spectrum University Press, Hyderabad - 38

I - B.Sc. (Electronics) / Semester II
Paper II: Electronic Devices and Circuits (AP)

UNIT-I

PN JUNCTION DIODES: P-N junction Diode, Depletion region, Barrier Potential, Working in Forward and Reverse bias condition – Junction capacitance, Diode current equation - Effect of temperature on reverse saturation current – Construction, Working, V-I characteristics and simple applications of varactor diode, Zener diode and Tunnel diode.

Notes: *These topics are covered in Unit-3.*

UNIT-II

BIPOLAR JUNCTION TRANSISTOR AND ITS BIASING (D.C): Introduction, Transistor Construction, Operation, and characteristics of CB, CE and CC-Configurations. Complete hybrid equivalent model, Transistor as a switch.

BJT Biasing: Fixed-Bias Circuit, Emitter-Stabilized Bias Circuit, Voltage-Divider Bias, Bias Stabilization.

Notes: *These topics are covered in Unit-4.*

UNIT-III

FIELD EFFECT TRANSISTORS, UJT & SCR: Introduction, Construction, Operation and Characteristics of FET/JFET, Drain and Transfer characteristics, Depletion-type, and Enhancement-Type MOSFETs.

FET Biasing: Fixed-Bias Configuration, Self-Bias Configuration, Voltage-Divider Biasing, UJT construction-working, V-I characteristics, UJT as a Relaxation oscillator.

Silicon Controlled Rectifier (SCR): Structure and working of SCR. Two transistor representation, Characteristics of SCR. Experimental set up to study the SCR characteristics, Application of SCR for power control.

Notes: *These topics are covered from Unit-5 and 7.*

UNIT-IV

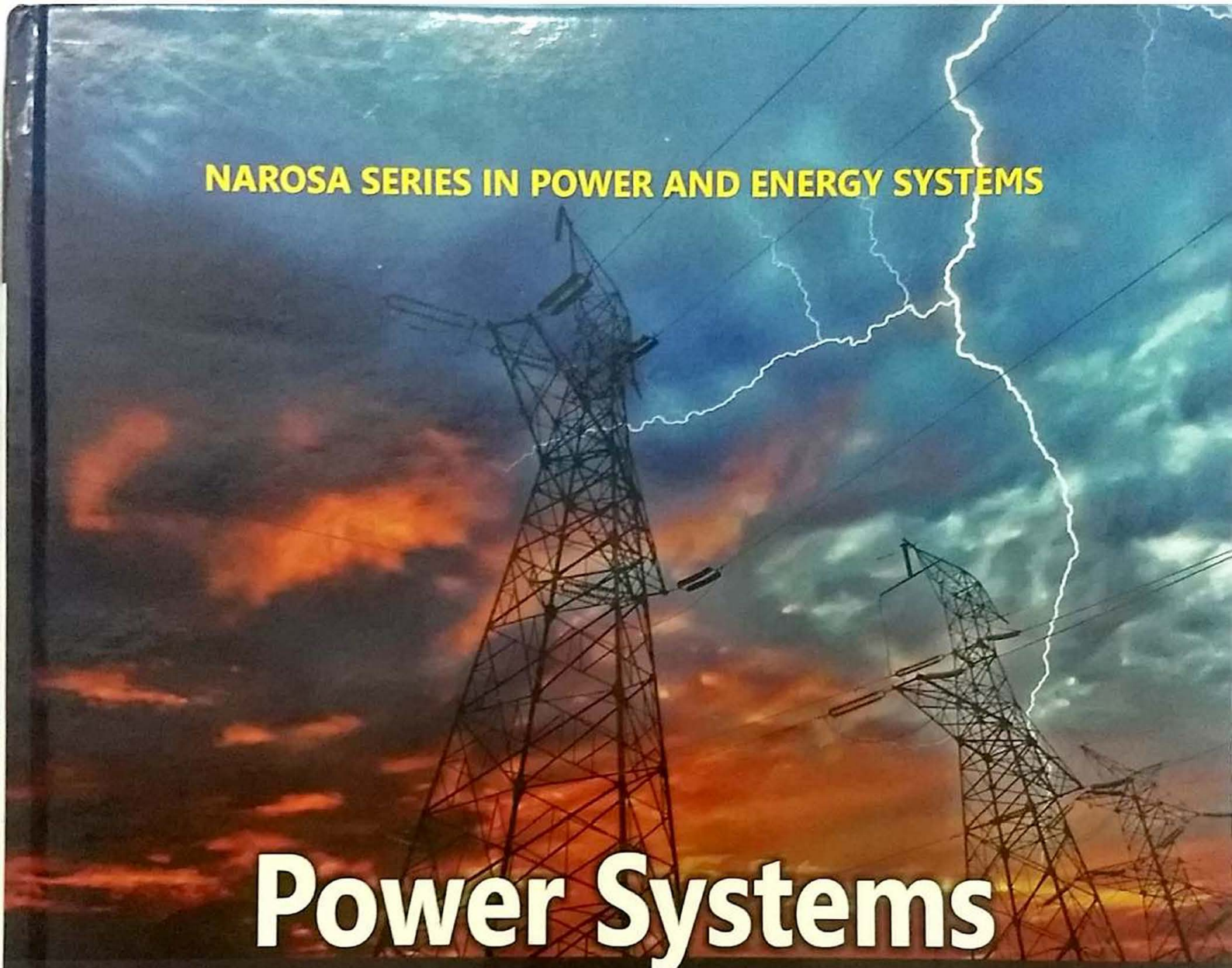
PHOTO ELECTRIC DEVICES: Light-Emitting Diodes (LEDs), IR Emitters, Photo diode, Photo transistors, Structure and operation of LDR and Opto-Isolators.

Notes: *These topics are covered in Unit-8.*

UNIT-V

POWER SUPPLIES: Rectifiers: Half wave, full wave and bridge rectifiers-Efficiency-ripple factor- Regulation, Types of filter-choke input(inductor) filter, shunt, L-section & π -section filters. Three terminal fixed voltage I.C.regulators (78XX and &79XX)- Principle and working of SMPS (switch mode power supplies).

Notes: *These topics are covered in Unit-9.*



NAROSA SERIES IN POWER AND ENERGY SYSTEMS

Power Systems

Planning, Operation and Control Strategies

Chief Editor
S.P. Singh

Editors
D. Singh • R.K. Mishra
R. Mahanty • Harish Balaga

Narosa

NAROSA SERIES IN POWER AND ENERGY SYSTEMS

Power Systems

Planning, Operation and Control Strategies

Chief Editor
S. P. Singh

Editors
D. Singh • R. K. Mishra
R. Mahanty • Harish Balaga

Narosa Publishing House
New Delhi Chennai Mumbai Kolkata

POWER SYSTEMS: Planning, Operation and Control Strategies
496 pgs.

Chief Editor
S. P. Singh

Editors
D. Singh
R. K. Mishra
R. Mahanty
Harish Balaga

Department of Electrical Engineering
Indian Institute of Technology (B.H.U.)
Varanasi

NAROSA PUBLISHING HOUSE PVT. LTD.

22 Delhi Medical Association Road, Daryaganj, New Delhi 110 002
35-36 Greams Road, Thousand Lights, Chennai 600 006
306 Shiv Centre, Sector 17, Vashi, Navi Mumbai 400 703
2F-2G Shivam Chambers, 53 Syed Amir Ali Avenue, Kolkata 700 019

www.narosa.com

Printed from the camera-ready copy provided by the Editors.

ISBN 978-81-8487-440-2

Published by N.K. Mehra for Narosa Publishing House Pvt. Ltd.,
22 Delhi Medical Association Road, Daryaganj, New Delhi 110 002

Printed in India

Contents

NAROSA SERIES IN POWER AND ENERGY SYSTEMS

Power Systems

Planning, Operation and Control Strategies

Chief Editor
S.P. Singh

Editors
D. Singh • R.K. Mishra
R. Mahanty • Harish Balaga

The Power System has seen many strides in past. The recent introduction of reform and restructuring of power industry has imposed further challenges to planners and operators, since new operational strategies are to be adopted over existing system, in order to maintain system security, reliability and supply quality. Introduction of power electronic devices and their application for interfacing distributed generation from renewable energy sources and existing grid is inevitable. However, they have given rise to newer problems which need to be addressed. Thus, enormous challenges are being faced present day by power industries which require efficient planners, technology, solution methods and software to address their problems effectively. The present book aims to put before readers the current problems faced by the power sector and the attempts being made by experts to solve them.

Narosa Publishing House
www.narosa.com

ISBN 978-81-8487-440-2

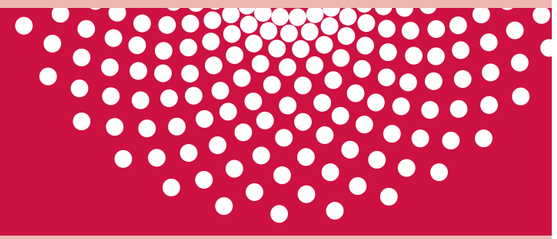
10

Procedia Materials Vol. 10 (2015) 1–792

ELSEVIER

Volume 10 • 2015

ISSN 2211-8128



Procedia Materials Science

2nd International Conference on Nanomaterials and Technologies (CNT 2014)

Editors:
P. Sarah and K. Venkateswarlu

Available online at www.sciencedirect.com

ScienceDirect

Available online at www.sciencedirect.com

ScienceDirect

Procedia Materials Science 10 (2015) i

Procedia Materials Science

www.elsevier.com/locate/procedia

2nd International Conference on Nanomaterials and Technologies (CNT 2014)

Editors:
P. Sarah and K. Venkateswarlu

ELSEVIER

Amsterdam - Boston - London - New York - Oxford - Paris - Philadelphia - San Diego - St Louis

Available online at www.sciencedirect.com

ScienceDirect

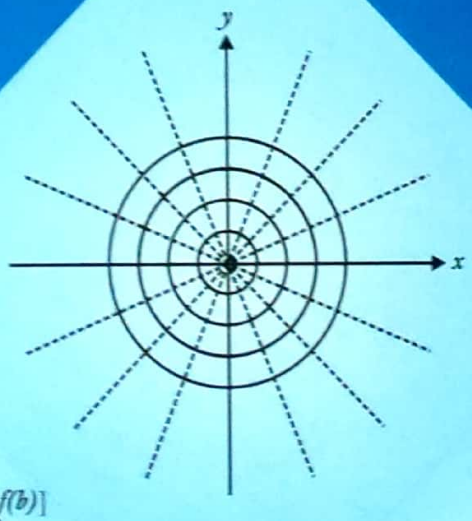
Procedia Materials Science 10 (2015) iii-vi

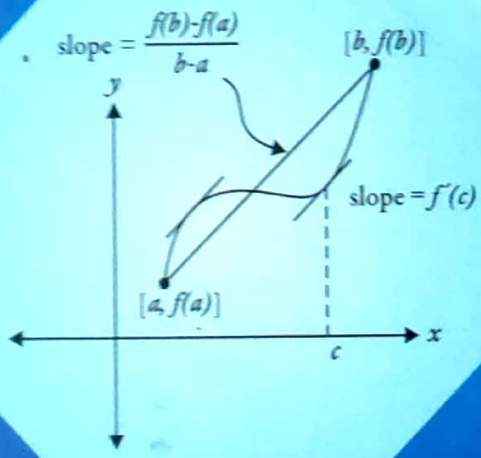
Procedia Materials Science

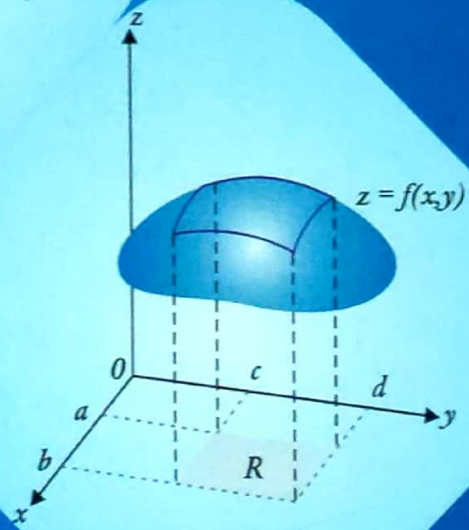
www.elsevier.com/locate/procedia

Contents

ENGINEERING MATHEMATICS – I







K MADHUSUDHAN REDDY
V KAVITHA
K SANTOSH REDDY
S P KISHORE

NAPH
Nu Age Publishing House

ENGINEERING MATHEMATICS - I

K MADHUSUDHAN REDDY
M.Sc., B.Ed., M.Phil., (Ph.D)
Associate Professor of Mathematics
Vardhaman College of Engineering
Shamshabad

V KAVITHA
M.Sc., M.Phil., (Ph.D)
Professor of Mathematics
Vardhaman College of Engineering
Shamshabad

K SANTOSH REDDY
M.Sc., M.Phil., (Ph.D)
Associate Professor of Mathematics
Vardhaman College of Engineering
Shamshabad

S P KISHORE
M.Sc., (Ph.D)
Assistant Professor of Mathematics
Vardhaman College of Engineering
Shamshabad

NUAPH
NU AGE PUBLISHING HOUSE
10-2-317/25/B/2, Vijayanagar Colony Hyderabad - 500 057
Phone : 040-23342339
Cell : 9866133308, 8125886047
Email : nuagepublshinghouse@gmail.com

CONTENTS

UNIT-III

UNIT-IV

ENGINEERING MATHEMATICS – I

SALIENT FEATURES

This book on Engineering Mathematics provides a simple but elegant introduction to basic concepts in mathematics necessary for any student of engineering. In addition to dealing with theorems, the book provides plenty of examples to explain unambiguously the reason behind the existence of such theorems and their applications in real life. Most importantly, the book is very affordable.

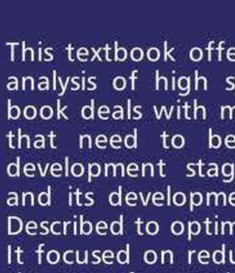
- All basic concepts and theories comprehensively explained in simple language
- Updated and revised syllabus, with new examples and solved problems
- Learner - friendly approach
- Elegant and imaginative methods for solving tough problems
- Problems in end semester examinations solved for the benefit of students appearing for regular / supplementary exams.
- Real world applications with suitable examples included and solved using more methods than one.
- Objective type questions given at the end of each unit for those preparing for competitive examinations.
- Model question papers as per the revised syllabus and regulations have been included
- Highly useful formulae included at the end of the book as a ready reckoner

NAPH
New Age Publishing House

10-2-317/25/B/2, Vijayanagar Colony,
Hyderabad - 500 057
Phone : 040 - 23342339,
Cell : 9866133308, 8125886047
Email : nuagepublishinghouse@gmail.com

₹ 275.00
ISBN 9788192908816
9 788192 908816

This textbook offers insight into parametric approach to computer aided analysis of high speed, high quality gears for marine applications. This book deals with marine engines which are among heavy-duty machineries that need to be taken care of in the best way during prototype development stages. Highlights of the textbook: -Described gear history and its developments, theoretical and finite element analysis of gears. -Described to optimize the design from weight, efficiency point of view and It focused on reduction of weight and minimizing the production cost of the gear for producing high accuracy gears.It's also includes a conclusion has been drawn on the material to be used for the gear.



Venkatesh Begori

B.VENKATESH, PhD, is Professor of Mechanical Engineering Department with VARDHAMAN COLLEGE OF ENGINEERING (Autonomous) Hyderabad.He got 13 years experience in teaching and various scientific field of mechanical engineering.

978-3-659-39888-9

Design for Helical Gear

Begori, Vattikuti

Venkatesh Begori
S. V. Prabhakar Vattikuti

Design of High Speed, High Quality Gears for Marine Applications

A Parametric Approach for Design of Helical Gear

LAP LAMBERT Academic Publishing

Subbarao Chamarthi
Purnanand V. Bhole
Srinivasa Reddy Nallimilli (Ed.)

An Introduction to performance improvement of a bio gas plant

LAP LAMBERT Academic Publishing

The global mega trends such as climate change are driving the increased adoption of renewable energy sources in general, whereas the price volatility, supply issues and environmental hazards of fossil fuel production are about to accelerate the pace in the investments of non-fossil fuels production in particular. Biogas, the most sustainable of biofuels, is in a starting point of an exponential market growth curve.This book will cover the latest developments and future scenarios of the rapidly developing bio gas market across the globe.

Subbarao Chamarthi

M.Tech (SVNIT - Surat), Assistant Professor,
Vardhaman College of Engineering, Hyderabad

978-3-659-44158-5