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Dependability and cost effectiveness are primarily seen as instruments for conducting international trade in the free market environment. These factors cannot be considered in isolation of each other. This handbook considers all aspects of performability engineering. The book provides a holistic view of the entire life cycle of activities of the product, along with the associated cost of environmental preservation at each stage, while maximizing the performance.

This monograph presents a survey of mathematical models useful in solving reliability problems. It includes a detailed discussion of life distributions corresponding to wearout and their use in determining maintenance policies, and covers important topics such as the theory of increasing (decreasing) failure rate distributions, optimum maintenance poli-

cies, and the theory of coherent systems. The emphasis throughout the book is on making minimal assumptions - and only those based on plausible physical considerations - so that the resulting mathematical deductions may be safely made about a large variety of commonly occurring reliability situations. The first part of the book is concerned with component reliability, while the second part covers system reliability, including problems that are as important today as they were in the 1960s. The enduring relevance of the subject of reliability and the continuing demand for a graduate-level book on this topic are the driving forces behind its re-publication.

As engineering systems become more and more complex, industry has recognized the importance of system and product reliability and places ever increasing emphasis on it during the design phase. Despite its efforts, however, industry

continues to lose billions of dollars each year because of unexpected system failures. Therefore, it becomes increasingly important for designers and engineers to have a solid grounding in reliability engineering and keep abreast of new developments and research results.

This text succeeds in giving a practical introduction to the fundamentals, problems and techniques of the design and utilisation of optical fiber systems. This edition retains all core features, while incorporating recent improvements and developments in the field.

The broad, yet in-depth coverage of C programming language, within the context of today's C programming style, makes this book as useful for practicing professionals as it is for beginning programmers. This study guide solves many sample problems using other programming languages so readers can compare several popular languages. It also includes clear explanations of most of the features in the current ANSI standard. The emphasis throughout is on designing clear, legible, modular and efficient programs.

This book 'Introduction to Computing and Problem Solving with Python' will help every student, teacher and researcher to understand the computing basics and advanced Python Programming language. The Python programming topics include the reserved keywords, identifiers, variables, operators, data types and their operations, flow control techniques which include decision making and looping, modules, files and exception handling techniques. Advanced topics like Python regular expressions, Database Programming and Object Oriented Programming concepts are also covered in detail. All chapters have worked out programs, illustrations, re-

view and frequently asked interview questions. The simple style of presentation makes this a friend for self-learners. More than 300 solved lab exercises available in this book is tested in Python 3.4.3 version for Windows. The book covers syllabus for more than 35 International Universities and 45 Indian universities like Dr. APJ Abdul Kalam Technological University, Christ University, Savitribai Phule Pune University, University of Delhi, University of Calicut, Mahatma Gandhi University, University of Mumbai, AICTE, CBSE, MIT, University of Virginia, University of Chicago, University of Toronto, Technical University of Denmark etc.

This compact and easy-to-understand text presents the underlying principles and practice of reliability engineering and life testing. It describes the various techniques available for reliability analysis and prediction and explains the statistical methods necessary for reliability modelling, analysis and estimation. The text also discusses in detail the concepts of life testing, its classification and methodologies as well as accelerated life tests, the methodologies and models of stress related failure rates evaluation, and data analysis. Besides, it elaborates on the principles, methods and equipment of highly accelerated life testing and highly accelerated stress screening. Finally, the book concludes with a discussion on the parametric as well as non-parametric methods generally used for reliability estimation, and the recent developments in life testing of engineering components. Key Features The book is up-to-date and very much relevant to the present industrial, research, design, and development scenarios. Provides adequate tools to predict the system reliability at the design stage, to plan and conduct life testing on the products at

various stages of development, and to use the life test and field data to estimate the product reliability. Gives sufficiently large number of worked-out examples. Primarily intended as a textbook for the postgraduate students of engineering (M.Tech., Reliability Engineering), the book would also be quite useful for reliability practitioners, professional engineers, and researchers.

Written by the most well known face of India's IT literacy movement, this book is designed for the first course in C taken by undergraduate students in Computers and Information Technology. The revised edition maintains the lucid flow and continuity which has been the strength of the book.

Programming with JAVA, 3e, incorporates all the updates and enhancements added to JAVA 2 and J2SE 5.0 releases. The book presents the language concepts in extremely simple and easy-to-understand style with illustrations and examples wherever necessary. Salient Features Fully explains the entire Java language. Discusses Java's unique features such as packages and interfaces. Shows how to create and implement applets. Illustrates the use of advanced concepts like multithread and graphics. Covers exception handling in depth. Debugging exercises and two full-fledged projects. Includes model questions from the Sun Certified JAVA Programmer Exam.

· Introduction. · Reliability Measures. · Static Reliability Models. · Probabilistic Engineering Design. · Combination of Random Variable's in Design. · Interference Theory and Reliability Computations. · Reliability Design Examples. · Time Dependent Stress-Strength Models. · Dynamic Reliability Models. · Reliability Estimation: Exponential Distribution. · Reliability Estimation: Weibull Distribution. · Sequential

Life Testing. · Bayesian Reliability in Design and Testing. · Reliability Optimization. · Author Index. · Subject Index.

This book is intended for the engineer or engineering student with little or no prior background in reliability. Its purpose is to provide the background material and guidance necessary to comprehend and carry out all the tasks associated with a reliability program from specification generation to final demonstration of reliability achieved. Most available texts on reliability concentrate on the mathematics and statistics used for reliability analysis, evaluation, and demonstration. They are more often suited more for the professional with a heavier mathematical background that most engineers have, and more often than not, ignore or pay short-shrift to basic engineering design and organizational efforts associated with a reliability program. A reliability engineer must be familiar with both the mathematics and engineering aspects of a reliability program. This text: 1. Describes the mathematics needed for reliability analysis, evaluation, and demonstration commensurate with an engineer's background. 2. Provides background material, guidance, and references necessary to the structure and implementation of a reliability program including: • identification of the reliability standards in most common use • how to generate and respond to a reliability specification • how reliability can be increased • the tasks which make up a reliability program and how to judge the need and scope of each; how each is commonly performed; caution and comments about their application.

An Integrated Approach to Product Development Reliability Engineering presents an integrated approach to the design, engineering, and management of reliability activities throughout the life cycle of a

product, including concept, research and development, design, manufacturing, assembly, sales, and service. Containing illustrative guides that include worked problems, numerical examples, homework problems, a solutions manual, and class-tested materials, it demonstrates to product development and manufacturing professionals how to distribute key reliability practices throughout an organization. The authors explain how to integrate reliability methods and techniques in the Six Sigma process and Design for Six Sigma (DFSS). They also discuss relationships between warranty and reliability, as well as legal and liability issues. Other topics covered include: Reliability engineering in the 21st Century Probability life distributions for reliability analysis Process control and process capability Failure modes, mechanisms, and effects analysis Health monitoring and prognostics Reliability tests and reliability estimation Reliability Engineering provides a comprehensive list of references on the topics covered in each chapter. It is an invaluable resource for those interested in gaining fundamental knowledge of the practical aspects of reliability in design, manufacturing, and testing. In addition, it is useful for implementation and management of reliability programs.

An overview of the programming language's fundamentals covers syntax, initialization, implementation, classes, error handling, objects, applets, multiple threads, projects, and network programming.

This long-awaited revision of a bestseller provides a practical discussion of the nature and aims of software testing. You'll find the latest methodologies for the design of effective test cases, including information on psychological and economic principles, managerial aspects, test

tools, high-order testing, code inspections, and debugging. Accessible, comprehensive, and always practical, this edition provides the key information you need to test successfully, whether a novice or a working programmer. Buy your copy today and end up with fewer bugs tomorrow.

As the Lead Reliability Engineer for Ford Motor Company, Guangbin Yang is involved with all aspects of the design and production of complex automotive systems. Focusing on real-world problems and solutions, Life Cycle Reliability Engineering covers the gamut of the techniques used for reliability assurance throughout a product's life cycle. Yang pulls real-world examples from his work and other industries to explain the methods of robust design (designing reliability into a product or system ahead of time), statistical and real product testing, software testing, and ultimately verification and warranting of the final product's reliability

Over the years, total quality management has become very important for improving a firm's processing capabilities to sustain competitive advantages. And in the last few years, the world has gone through many major changes in terms of information technology, quality system standards, customer satisfaction levels, economic changes, approaches of the government and political alignments on the national and international level. Keeping these developments in mind, Total Quality Management, 5e has been revised to focus on encouraging a continuous flow of incremental improvements from the bottom of the organization's hierarchy.

Defects generate a great economic problem for suppliers who are faced with increased duties. Customers expect in-

creased efficiency and dependability of technical product of - also growing - complexity. The authors give an introduction to a theory of dependability for engineers. The book may serve as a reference book as well, enhancing the knowledge of the specialists and giving a lot of theoretical background and information, especially on the dependability analysis of whole systems.

Providing a comprehensive approach to both the art and science of reliability engineering, this volume covers all aspects of the field, from basic concepts to accelerated testing, including SPC, designed experiments, human factors, and reliability management. It also presents the theory of reliability systems and its application as prescribed by industrial and government standards.

This updated and expanded edition discusses many different tools for root cause analysis and presents them in an easy-to-follow structure: a general description of the tool, its purpose and typical applications, the procedure when using it, an example of its use, a checklist to help you make sure it is applied properly, and different forms and templates (that can also be found on an accompanying CD-ROM). The examples used are general enough to apply to any industry or market. The layout of the book has been designed to help speed your learning. Throughout, the authors have split the pages into two halves: the top half presents key concepts using brief language—almost keywords—and the bottom half uses examples to help explain those concepts. A roadmap in the margin of every page simplifies navigating the book and searching for specific topics. The book is suited for employees and managers at any organizational level in any type of industry, including service, manu-

facturing, and the public sector.

Modern society depends heavily upon a host of systems of varying complexity to perform the services required. The importance of reliability assumes new dimensions, primarily because of the higher cost of these highly complex machines required by mankind and the implication of their failure. This is why all industrial organizations wish to equip their scientists, engineers, managers and administrators with a knowledge of reliability concepts and applications. Based on the author's 20 years experience as reliability educator, researcher and consultant, Reliability Engineering introduces the reader systematically to reliability evaluation, prediction, allocation and optimization. It also covers further topics, such as maintainability and availability, software reliability, economics of reliability, reliability management, reliability testing, etc. A reliability study of some typical systems has been included to introduce the reader to the practical aspects. The book is intended for graduate students of engineering schools and also professional engineers, managers and reliability administrators as it has a wide coverage of reliability concepts.

The book has been designed for undergraduate students studying Mechanical Engineering or Industrial Engineering. It discusses various concepts and provides practical knowledge related to the area of Industrial Engineering and Management. The book lucidly covers Project Management, Quality Management, Costing etc. in detail to develop the required skills among the students.

Increase profitability and reduce risk through effective parts selection and management Corporations recognize that technology can be the key to fueling product design and development. But

just as crucial-if not more-to a company's success are the decisions about when, what, and how a technology will be used. Few companies have failed because the right technology was not available; many have failed when a technology was not effectively selected and managed. Parts Selection and Management is a guide to increasing company profitability and reducing the time-to-profit through the efficient management of the process of parts selection and management. Taking an "eyes-on, hands-off" approach to parts selection, this guidebook addresses risk-assessment, decision-making steps, and subsequent management activities. The book covers everything from methodologies for parts selection and management, product requirements and specifications, and manufacturer assessment procedures to ways to track part changes through the supply chain, reliability assessment, and environmental, legislative, and legal issues. Written by a seasoned professional, teacher, and author in the field, the book enables companies to:

- \* Employ effective risk assessment and mitigation techniques
- \* Make an informed company-wide decision about parts selection and management
- \* Choose parts to fit the functionality of the product and other constraints
- \* Maximize system supportability by preparing for parts obsolescence
- \* Improve supply-chain interactions and communications with customers and regulatory agencies to minimize time-to-profit

Shedding light on a neglected but essential aspect of product development, Parts Selection and Management will give your organization the tools you need to avoid the risks associated with product use while promoting flexibility, innovation, and creativity in your product development.

This text book on Reliability and Maintenance

Engineering has been prepared considering the syllabuses of all technical universities for their BE and ME courses. This book also fulfill the requirement of the University and College Teachers; Engineers, Technical Supervisors and Staff who are directly engaged in the industry. This book covers:

- Traditional and modern concept, importance, function of Maintenance Engineering,
- Organizational Setup and Record Keeping in maintenance,
- Corrosions,
- Safety in Maintenance,
- Various hazards and Fault Tree Analysis,
- House Keeping Practice in Maintenance,
- Incentive Payments for Maintenance Workers,
- Reliability and Availability of Engineering Systems,
- Computerized Maintenance Information Systems,
- Total Productive Maintenance,
- Maintenance Aspect: Lubrications,
- Inspection and Testing in Maintenance Engineering,
- Assets Management;
- Lean Maintenance and Application of Different Techniques in Maintenance,
- Manpower Planning and Training,
- Fault Diagnosis and Condition Monitoring,
- Spare Parts Management and Quality Control in Maintenance,
- Budgets and Cost Aspect of Maintenance,
- Maintenance Effectiveness; Performance Evolution and Audit,
- Maintenance of Mechanical, Electrical, Process and Service Equipments,
- Machine Failure; Development of Preventive Maintenance Schedule; Breakdown Time Distribution and Trouble Shooting.

With all these above mentioned features the author is quite confident with feeling that the book will fulfill the demands and needs of maintenance engineers and students.

An Introduction to Object-Oriented Programming with Java provides an accessible and thorough introduction to the basics of programming in java. This much-

anticipated revision continues its emphasis on object-oriented programming. Objects are used early so students begin thinking in an object-oriented way, then later Wu teaches students to define their own classes. In the third edition, the author has eliminated the author-written classes, so students get accustomed to using the standard java libraries. In the new update, the author has included the Scanner Class for input, a new feature of Java 1.5. Also new is the use of smaller complete code examples to enhance student learning. The larger sample development programs are continued in this edition, giving students an opportunity to walk incrementally walk through program design, learning the fundamentals of software engineering. The number and variety of examples makes this a student-friendly text that teaches by showing. Object diagrams continue to be an important element of Wu's approach. The consistent, visual approach assists students in understanding concepts.

Written by the most well known face of India's IT literacy movement, this book is designed for the first course in C# taken by undergraduate students in Computers and Information Technology. The revised edition maintains the lucid flow and continuity which has been the strength of the book.

This comprehensive and well-organized text discusses the fundamentals of elec-

tronic communication, such as devices and analog and digital circuits, which are so essential for an understanding of digital electronics. Professor Santiram Kal, with his wealth of knowledge and his years of teaching experience, compresses, within the covers of a single volume, all the aspects of electronics - both analog and digital - encompassing devices such as microprocessors, microcontrollers, fibre optics, and photonics. In so doing, he has struck a fine balance between analog and digital electronics. A distinguishing feature of the book is that it gives case studies in modern applications of electronics, including information technology, that is, DBMS, multimedia, computer networks, Internet, and optical communication. Worked-out examples, interspersed throughout the text, and the large number of diagrams should enable the student to have a better grasp of the subject. Besides, exercises, given at the end of each chapter, will sharpen the student's mind in self-study. These student-friendly features are intended to enhance the value of the text and make it both useful and interesting. A guide and reference to product reliability testing, this volume covers various steps from planning and test selection to test procedure and results analysis. It delivers information on a variety of distributions, including the Chi-Square, Exponential, Normal, Lognormal, Weibull, Gamma, and others.