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Bhubaneswar Orissa Service Manual: Orissa service code, vol. 2 & notes with case law Odisha Society of Americas Golden Jubilee Convention Convener's Report Recent Developments in Historical and Archaeological Researches in Odisha Green Technology for Smart City and Society Chemical Modification of Solid Surfaces by the Use of Additives Highland Odisha The Paika Rebellion Revitalizing Indian Agriculture and Boosting Farmer Incomes OPSC Odisha Current Affairs Yearbook 2020 EEG Brain Signal Classification for Epileptic Seizure Disorder Detection Cultural History of Odisha Nanotechnology in Biology and Medicine Season and Crop Report of Orissa for the Year Microbial Biotechnology Local government planning for community food systems Smart Technologies for Power and Green Energy Cognitive Big Data Intelligence with a Metaheuristic Approach International Horseshoe Crab Conservation and Research Efforts: 2007- 2020 Intelligent System Design Advances in Distributed Computing and Machine Learning Indian Agriculture State of the Adivasis in Odisha 2014 Orissa State Gazetteer The Role of IoT and Blockchain Prebiotics and Probiotics: A New Era of

Nutraceuticals Augmented Intelligence in Healthcare: A Pragmatic and Integrated Analysis Save This Land Ethnopharmacology and Biodiversity of Medicinal Plants Microbial Diversity in the Genomic Era Functional Food and Diseases Advances in Pharmaceutical Biotechnology Electrochemical Energy Conversion and Storage Systems for Future Sustainability Orissa Review The Orissa Education Code Beach Management Tools - Concepts, Methodologies and Case Studies A Textbook of Animal Behaviour New and Future Developments in Microbial Biotechnology and Bioengineering Regressing forward: Agriculture mechanization subsidy modalities in Bihar and Odisha Microbial Management of Plant Stresses

The book discusses how augmented intelligence can increase the efficiency and speed of diagnosis in healthcare organizations. The concept of augmented intelligence can reflect the enhanced capabilities of human decision-making in clinical settings when augmented with computation systems and methods. It includes real-life case studies highlighting impact of augmented intelligence in health

care. The book offers a guided tour of computational intelligence algorithms, architecture design, and applications of learning in healthcare challenges. It presents a variety of techniques designed to represent, enhance, and empower multi-disciplinary and multi-institutional machine learning research in healthcare informatics. It also presents specific applications of augmented intelligence in health care, and architectural models and framework-based augmented solutions. The State of the Adivasis in Odisha 2014: A Human Development Analysis endeavours to identify and highlight the development concerns of the tribals of the state, explore their causes and provide an opportunity to the state planners in prioritising the human development issues specific to this community. As one of the most excluded communities of India, Adivasis face many challenges in their daily lives: extreme poverty, social exclusion, poor access to healthcare, education and employment opportunities, displacement from their lands and forests and so on. The key objective of this report is to understand these areas of deprivations. It is imperative for the government to ensure food and nutritional

security to Adivasis. Efforts should be made for conservation of forests. The tribes need to be provided with hospitals, schools and basic infrastructural facilities. Equal participation of women in project committees at all levels and in training schemes and commercial ventures should be taken to reduce gender inequality. Based on primary and secondary data analysis, this report studies the poor socio-economic condition of the Adivasis and offers possible solutions for empowering the tribal community as a whole. This edited book entitled "Recent Developments in Historical and Archaeological Researches in Odisha", incorporating seventeen essays on Odisha's past from prehistory to the modern period. All the seventeen essays are original research papers based on primary and secondary data. These essays are arranged in chronological order and focused on different aspects of Odisha in time and space i.e. prehistoric, protohistoric and early historic archaeology of Odisha, Epigraphic studies, the political and economic history of the ancient and medieval period, temple architecture, modern and contemporary history, and tribal studies. The book is a collection of best selected research papers presented at International Conference on Smart Technology for Power and Green Energy (STPGE 2022), organized by School of Electrical Engineering, KIIT, Deemed to be University, Bhubaneswar, India, during February 12 - 13, 2022. The book discusses recent developments and contemporary research in power electronics and energy. This

book provides an overview of beach management tools, including carrying capacity, beach nourishment, environmental and tourism awards (like Blue Flag or others), bathing water quality, zoning, beach typologies, quality index, user's perception, interdisciplinary beach monitoring, coastal legislation, shore protection, social and economic indicators, ecosystem services, and coastal governance (applied in beach case studies). Beaches are one of the most intensely used coastal ecosystems and are responsible for more than half of all global tourism revenues, and as such the book introduces a wide range of state-of-the-art tools that can be used to deal with a variety of beach challenges. Each chapter features specific types of tools that can be applied to advantage in beach management practices. With examples of local and regional case studies from around the globe, this is a valuable resource for anyone involved in beach management. Nanotechnology in biology and medicine: Research advancements & future perspectives is focused to provide an interdisciplinary, integrative overview on the developments made in nanotechnology till date along with the ongoing trends and the future prospects. It presents the basics, fundamental results/current applications and latest achievements on nanobiotechnological researches worldwide scientific era. One of the major goals of this book is to highlight the multifaceted issues on or surrounding of nanotechnology on the basis of case studies,

academic and theoretical articles, technology transfer (patents and copyrights), innovation, economics and policy management. Moreover, a large variety of nanobio-analytical methods are presented as a core asset to the early career researchers. This book has been designed for scientists, academician, students and entrepreneurs engaged in nanotechnology research and development. Nonetheless, it should be of interest to a variety of scientific disciplines including agriculture, medicine, drug and food material sciences and consumer products. Features It provides a thoroughly comprehensive overview of all major aspects of nanobiotechnology, considering the technology, applications, and socio-economic context It integrates physics, biology, and chemistry of nanosystems It reflects the state-of-the-art in nanotechnological research (biomedical, food, agriculture) It presents the application of nanotechnology in biomedical field including diagnostics and therapeutics (drug discovery, screening and delivery) It also discusses research involving gene therapy, cancer nanotheranostics, nano sensors, lab-on-a-chip techniques, etc. It provides the information about health risks of nanotechnology and potential remedies. It offers a timely forum for peer-reviewed research with extensive references within each chapter The study of animal behaviour begins with understanding how an animal's physiology and anatomy are integrated with its behavioural patterns. Both external and internal stimuli prompt behaviours

e.g., threats from other animals, sounds, smells or weather and internal information e.g., hunger, fear etc. Understanding how genes and the environment come together to shape animal behaviour is also an important underpinning of the field. Genes capture the evolutionary responses of prior populations to selection on behaviour. Environmental flexibility gives animals the opportunity to adjust to changes during their own lifetime. Scientists are drawn to the study of animal behaviour for varied reasons and the field is extremely broad, ranging from research on feeding behaviour and habitat selection to mating behaviour and social organizations. Many scientists study animal behaviour because it sheds light on human beings. Research on non-human primates, for instance, continues to offer valuable perspectives into the causes and evolution of individual, social, and reproductive human actions. Understanding why some animals help others at the potential cost of their own survival and reproduction, for example, not only gives us insight into their behaviour but could also help us to understand the underpinnings of our ideas of altruism and sacrifice. Save This Land discusses some topical issues of the environment. In each of the six chapters, a topic is chosen, the problem is analysed, the dangers are described and the solutions are presented with an appeal to all for proaction to save this land. The imminent desertification caused by deforestation of land, amply served by the monsoon, must be averted

by the construction of hundreds of thousands of micro-dams. The threat of sea level rise needs to be combated by undertaking a massive project of Coastal Works. The Ganga could remain perennial only with significant reforestation and strengthening of lateral and terminal moraines in the Himalaya. "When rivers die, civilisations die," and this land faces an existential crisis because of the rivers choked to death by a vast deposition of sediments that need to be excavated for their revival. The Hirakud Dam on the Mahanadi must be revived too. Bodies of good clean drinking water are the heritage of humanity and they are getting polluted. The water quality is paramount and must be maintained. This book presents recent advances in the field of scalable distributed computing including state-of-the-art research in the field of Cloud Computing, the Internet of Things (IoT), and Blockchain in distributed environments along with applications and findings in broad areas including Data Analytics, AI, and Machine Learning to address complex real-world problems. It features selected high-quality research papers from the 2nd International Conference on Advances in Distributed Computing and Machine Learning (ICADCML 2021), organized by the Department of Computer Science and Information Technology, Institute of Technical Education and Research(ITER), Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar, India. The first International Conference on

Horseshoe Crab's Conservation conducted at Dowling College, USA, (2007) and it's proceedings published by Springer in 2009, prompted the continued research and conservation efforts presented at subsequent conferences and colloquium in Hong Kong, Taiwan, (2011); San Diego, CA, (2014), (CERF); Japan, Sasebo (2015) and an accepted inclusion for a special session on Horseshoe Crabs at the 2017 CERF Conference held in Providence, RI, USA. All these aforementioned conferences contributed manuscripts, posters, workshop "position papers", and oral presentations the majority of which have not been published in total. In 2015, Carmichael et al. had published by Springer the majority of manuscripts from the 2011 Hong Kong / Taiwan conference. However, workshop results and all subsequent presentations and workshops were not. The Japan conference presented over 40 papers alone. A collection of all workshop summaries, poster presentations and new manuscript submittals (San Diego, CA; Sasebo, Japan; and Providence, RI) as well as products prepared for the IUCN World Congress in Hawaii, (2016), are included potential contributions for review in this compilation now available for global distribution in this Springer Nature publication. The "Proceedings of International Conferences on the Biology and Conservation of Horseshoe Crabs", thus contains over 50 manuscripts and a diversified collection of documents, photos and memorabilia covering all four of the horseshoe crab species globally: their biology,

ecology evolution, educational, and societal importance. This book exposes the impacts that humans have imposed on all four of these species, revealing through the coordinated effort of horseshoe crab scientists with the IUCN, of the worldwide need for a clear conservative effort to protect these paleo-survival organisms from a looming extinction event. Biologists, conservationists, educators, and health professionals will all welcome this book not only for exploration of its pharmacological interest, but also for the mystery of their longevity. This book also clarifies the future research needs and the conservation agenda for the species worldwide. Anyone working or studying estuaries on a global scale, will need to obtain this seminal work on horseshoe crabs. Odisha Society of Americas Golden Jubilee Convention Convener's Report This open access book provides an evidence-based roadmap for revitalising Indian agriculture while ensuring that the growth process is efficient, inclusive, and sustainable, and results in sustained growth of farmers' incomes. The book, instead of looking for global best practices and evaluating them to assess the possibility of replicating these domestically, looks inward at the best practices and experiences within Indian states, to answer questions such as -- how the agricultural growth process can be speeded up and made more inclusive, and financially viable; are there any best practices that can be studied and replicated to bring

about faster growth in agriculture; does the prior hypothesis that rapid agricultural growth can alleviate poverty faster, reduce malnutrition, and augment farmers' incomes stand? To answer these questions, the book follows four broad threads -- i) Linkage between agricultural performance, poverty and malnutrition; ii) Analysing the historical growth performance of agricultural sector in selected Indian states; iii) Will higher agricultural GDP necessarily result in higher incomes for farmers; iv) Analysing the current agricultural policy environment to evaluate its efficiency and efficacy, and consolidate all analysis to create a roadmap. These are discussed in 12 chapters, which provide a building block for the concluding chapter that presents a roadmap for revitalising Indian agriculture while ensuring growth in farmers' incomes. This new volume discusses new and well-known electrochemical energy harvesting, conversion, and storage techniques. It provides significant insight into the current progress being made in this field and suggests plausible solutions to the future energy crisis along with approaches to mitigate environmental degradation caused by energy generation, production, and storage. Topics in Electrochemical Energy Conversion and Storage Systems for Future Sustainability: Technological Advancements address photoelectrochemical catalysis by ZnO, hydrogen oxidation reaction for fuel cell application, and miniaturized energy storage devices in the form of micro-supercapacitors.

The volume looks at the underlying mechanisms and acquired first-hand information on how to overcome some of the critical bottlenecks to achieve long-term and reliable energy solutions. The detailed synthesis processes that have been tried and tested over time through rigorous attempts of many researchers can help in selecting the most effective and economical ways to achieve maximum output and efficiency, without going through time-consuming and complex steps. The theoretical analyses and computational results corroborate the experimental findings for better and reliable energy solutions. Chemical Modification of Solid Surfaces by the Use of Additives brings ten comprehensive chapters covering different types of solid surface modifications by using surfactants or other chemicals. Each chapter explains different types of chemical surface modifications that are important for a large variety of applications. The uses of each type of modification is summarized to give the reader an overview of recent developments in this field of materials science. The book also highlights the importance of surface modification for the biomedical application of polysaccharides, sensing application of carbon electrode, metal coating substrate surfaces, microelectronic, microwave applications of perovskite material and the role of nanotechnology. This book is a useful reference for chemical engineering and civil engineering students who wish to understand the surface chemistry of additive

materials. Scholars undertaking courses in nanotechnology and environmental science will also benefit from the information presented by the book. Cognitive Big Data Intelligence with a Metaheuristic Approach presents an exact and compact organization of content relating to the latest metaheuristics methodologies based on new challenging big data application domains and cognitive computing. The combined model of cognitive big data intelligence with metaheuristics methods can be used to analyze emerging patterns, spot business opportunities, and take care of critical process-centric issues in real-time. Various real-time case studies and implemented works are discussed in this book for better understanding and additional clarity. This book presents an essential platform for the use of cognitive technology in the field of Data Science. It covers metaheuristic methodologies that can be successful in a wide variety of problem settings in big data frameworks. Provides a unique opportunity to present the work on the state-of-the-art of metaheuristics approach in the area of big data processing developing automated and intelligent models Explains different, feasible applications and case studies where cognitive computing can be successfully implemented in big data analytics using metaheuristics algorithms Provides a snapshot of the latest advances in the contribution of metaheuristics frameworks in cognitive big data applications to solve optimization problems Farm mechanization is indispensable for enhancing agricultural

productivity across the country. Over the years, the Indian government has instituted several schemes and programs to promote agricultural mechanization in the country. Until recently, state and central government schemes took the form of price subsidies, especially targeting critical farm equipment. More recently, the government has shifted to direct benefit transfers (DBT) for all agricultural inputs, including farm implements. While the central government instituted the broader schemes and programs, the specifics concerning subsidy disbursement have been left to state governments, with flexibility on which implements to promote and how much and when to disburse subsidy payments. These broad guidelines have been enshrined in several programs, chief among which is the National Mission on Agriculture Extension and Technology (NMAET). This book includes selected papers from the International Conference on Green Technology for Smart City and Society (GTSCS 2020), organized by the Institute of Technical Education and Research, Siksha 'O' Anusandhan University, Bhubaneswar, India, during 13-14 August 2020. The book covers topics such as machine learning, artificial intelligence, deep learning, optimization algorithm, IoT, signal processing, etc. The book is helpful for researchers working in the discipline of Electrical, Electronics and Computer Science. The researchers working in the allied domain of communication and control will also find the book useful as it deals with the

latest methodologies and applications. Over the last couple of decades, local governments have started taking action to address food system challenges. Many innovative food policies have taken place in cities in particular. However, despite major developments spearheaded by visionary local leaders and communities in recent years, local governments in low- and middle-income countries (LMICs) continue to face major challenges in integrating food security, nutrition and sustainable food systems in their agenda. This publication introduces a new knowledge base for understanding food planning and governance processes and models in local governments of low- and middle-income countries, a valuable counterbalance to the prevailing literature and experience from high-income countries. It provides practical insights on the needs, challenges and opportunities in local food planning practice in three countries in Asia, Africa and Latin America and the Caribbean. Based on reported cases, this publication offers a broad guiding framework and a methodology for subnational government bodies - including city, metropolitan, regional, district and parish governments - that takes into consideration the uniqueness of each local context. The concept originated in Japan in the 1980s when government agencies started approving foods with proven benefits in an effort to better the health of the general population. Functional foods is a very popular term in the social and scientific media; consequently, food producers have invested

resources in the development of processed foods that may provide added functional benefits to consumers' well-being. Because of intrinsic regulation and end-of-use purposes in different countries, worldwide meanings and definitions of this term are still unclear. Hence, here we standardize this definition and propose a guideline to attest that some ingredients or foods truly deserve this special designation. Furthermore, focus is directed at the most recent studies and practical guidelines that can be used to develop and test the efficacy of potentially functional foods and ingredients. The most widespread functional ingredients, such as polyunsaturated fatty acids (PUFAs), probiotics/prebiotics/synbiotics, and antioxidants, and their technological means of delivery in food products are described. Biogenics are biologically active peptides, including immunopotentiators (biological response modifier: BRM), plant flavonoids, etc. Thus, functional foods enhance bioregulation such as stresses, appetite and absorption; biodefence, such as immunity and suppression of allergies; prevent diseases, including diarrhea, constipation, cancer, cholesterolemia and diabetes; and suppress aging through immunostimulation as well as suppression of mutagenesis, carcinogenesis, oxidation processes, intestinal putrefaction, and cholesterolemia. This volume examines the transitions in Indian agriculture since the 1980s, and emphasizes upon the role of neoliberal policies and their impact. The essays

presented here deal with a range of pertinent and contemporary issues, including global food security, livelihoods of agricultural labourers, and public and private investment. These weave together glimpses of the impasse faced by petty commodity producers (marginal and small farmers) and their subsequent economic distress and social exclusion. Comprehensive in analysis, this book will be useful to scholars and researchers of agricultural economics, political economy, political science and public policy. Ethnopharmacology and Biodiversity of Medicinal Plants provides a multitude of contemporary views on the diversity of medicinal plants, discussing both their traditional uses and therapeutic claims. This book emphasizes the importance of cataloging ethnomedical information as well as examining and preserving the diversity of traditional medicines. It also discusses the challenges present with limited access to modern medicine and the ways in which research can be conducted to enhance these modern practices. The book also explores the conservation procedures for endangered plant species and discusses their relevance to ethnopharmacology. Each chapter of this book relays the research of experts in the field who conducted research in diverse landscapes of India, providing a detailed account of the basic and applied approaches of ethnobotany and ethnopharmacology. The book reviews multiple processes pertaining to medicinal plants, such as collecting the traditional therapeutic values

and validation methods. It also explores developments in the field such as the diversity and medicinal potential of unexplored plant species and applications in drug formulation to fight against anti-microbial resistance (AMR). Historical knowledge could be a guide to understand the present and shape our future also. An important aspect of this book is to critically analyze the culture of Odisha. This book is to outline the emergence of Islam and its role on various aspects of Odishan way of life, of course, Odisha has been home of different tradition and customs from generation. With the entry of Islam, there were noticeable changes occurred in Odishan society, religion, historiography, art, architecture, painting, language, maritime trade and commercial intercourse. The culture of Odisha is full of continuity and enrichments. The history of Odisha during the post-Islamic involvement is a portrayal of reconciliation between the Hindus and the Muslims on various field. In this book eighteen chapters have been dealt which are culturally associate with odisha. The cultural fusion of Odisha has been critically emphasized here. This edited book, is a collection of 20 articles describing the recent advancements in the application of microbial technology for sustainable development of agriculture and environment. This book covers many aspects like agricultural nanotechnology, promising applications of biofuels production by algae, advancements and application of microbial keratinase,

biocontrol agents, plant growth promoting rhizobacteria, bacterial siderophore, use of microbes in detoxifying organophosphate pesticides, bio-surfactants, biofilms, bioremediation degradation of phenol and phenolic compounds and bioprospecting of endophytes. This book intends to bring the latest research advancements and technologies in the area of microbial technology in one platform, providing the readers an up-to-date view on the area. This book would serve as an excellent reference book for researchers and students in the agricultural, environmental and microbiology fields. This volume inverts the othering characteristic of most studies of Odisha by drawing attention to the highlands in the west and south. Based on fieldwork, participant observation, oral traditions, archival materials and long-term historical and anthropological research by a range of scholars negotiating this region and its people, this volume examines the less visible and often misrecognized highlands of Odisha, thus questioning dominant coast-centric views and acknowledging a multitude of perspectives on Odisha beyond simplified dichotomies. The nine essays herein cover themes such as social structures and patterns of kinship and relatedness; concepts of food, music or death and their significance to wider cosmologies; interdependencies among highland communities and the position of migrant farmers between caste and Adivasi society; and processes of resistance and ideas around

Nehruvian industrialization projects set up in the supposed 'wilderness'. EEG Brain Signal Classification for Epileptic Seizure Disorder Detection provides the knowledge necessary to classify EEG brain signals to detect epileptic seizures using machine learning techniques. Chapters present an overview of machine learning techniques and the tools available, discuss previous studies, present empirical studies on the performance of the NN and SVM classifiers, discuss RBF neural networks trained with an improved PSO algorithm for epilepsy identification, and cover ABC algorithm optimized RBFNN for classification of EEG signal. Final chapter present future developments in the field. This book is a valuable source for bioinformaticians, medical doctors and other members of the biomedical field who need the most recent and promising automated techniques for EEG classification. Explores machine learning techniques that have been modified and validated for the purpose of EEG signal classification using Discrete Wavelet Transform for the identification of epileptic seizures Encompasses machine learning techniques, providing an easily understood resource for both non-specialized readers and biomedical researchers Provides a number of experimental analyses, with their results discussed and appropriately validated This book presents a collection of high-quality, peer-reviewed research papers from the 7th International Conference on Information System Design and Intelligent

Applications (India 2022), held at BVRIT Hyderabad College of Engineering for Women, Hyderabad, Telangana, India, from February 25 to 26, 2022. It covers a wide range of topics in computer science and information technology, including data mining and data warehousing, high-performance computing, parallel and distributed computing, computational intelligence, soft computing, big data, cloud computing, grid computing and cognitive computing. This volume provides informative chapters on the emerging issues, challenges, and new methods and state-of-the-art technologies on the Internet of Things and blockchain technology. It presents case studies and solutions that can be applied in the current business scenario, resolving challenges and providing solutions by integrating IoT with blockchain technology. The chapters discuss how the Internet of Things (IoT) represents a revolution of the Internet that can connect nearly all environment devices over the Internet to share data to create novel services and applications for improving quality of life. Although the centralized IoT system provides countless benefits, it raises several challenges. The volume presents IoT techniques and methodologies, blockchain techniques and methodologies, and case studies and applications for data mining algorithms, heart rate monitoring, climate prediction, disease prediction, security issues, automotive supply chains, voting prediction, forecasting particulate matter pollution, customer

relationship management, and more. Odisha Current Affairs Yearbook 2020 1. Introduction of Odisha (Static GK) 2. Current Affairs (whole year) Odisha Current Affairs Yearbook 2020, Useful for Odisha State PSC and all other competitive exams. This book deals with the relevant features and topics of Current affairs of State in a systematic and comprehensive manner by the use of simple and concise language for easy and quick understanding. We hope that the readers will find this book user friendly and helpful in preparation of their examinations. I look forward to have the views, comment, suggestions and criticism from readers which would definitely help in further improvement of the Book. I would like to heartfelt thanks to all my team members for their efforts to prepare this book. Odisha Current Affairs/General Knowledge Yearbook 2020 has become an integral part of a lot of entrance exams being conducted at the graduate and under-graduate levels. It is very important for students to remain updated on the current happenings in their surroundings especially those that are important from the perspective of state. Current Affairs Yearbook 2020, a thoroughly revised, reorganised, updated and ENLARGED edition, presents a comprehensive study of all the sections that are covered under the subject of General Knowledge. The Yearbook 2020 provides the latest information & most authentic data reference material on Current Affairs and General Knowledge. It has specially been

designed to cater to aspirants of various competitive exams like OPSC and Other Odisha State PSC Civil services Exams across the State. The material has been written in a lucid language and prepared as per the requirements of the various competitive exams. Current Affairs consists of latest news/ information about Odisha based on The Hindu, Indian Express, PIB, Yojana, People, Events, Ideas and Issues across the Social, Economic & Political climate of the State. Best wishes for your exams!! #OPSC #Odishagk #Currentaffairs #latestgk #Generalknowledge #yearbook2020 #StatePSCExams Microbial Management of Plant Stresses: Current Trends, Application and Challenges explores plant microbiota including isolated microbial communities that have been used to study the functional capacities, ecological structure and dynamics of the plant-microbe interaction with focus on agricultural crops. Presenting multiple examples and evidence of the potential genetic flexibility of microbial systems to counteract the climate induced stresses associated with their host as a part of indigenous system, this book presents strategies and approaches for improvement of microbiome. As climate changes have altered the global carbon cycling and ecological dynamics, the regular and periodic occurrences of severe salinity, drought, and heat stresses across the different regimes of the agro-ecological zones have put additional constraints on agricultural ecosystem to produce efficient foods and other derived products for rapidly

growing world population through low cost and sustainable technology. Furthermore chemical amendments, agricultural inputs and other innovative technologies although may have fast results with fruitful effects for enhancing crop productivity but also have other ecological drawbacks and environmental issues and offer limited use opportunities. Microbial formulations and/or microbial consortia deploying two or multiple partners have been frequently used for mitigation of various stresses, however, field success is often variable and improvement Smart, knowledge-driven selection of microorganisms is needed as well as the use of suitable delivery approaches and formulations. Microbial Management of Plant Stresses: Current Trends, Application and Challenges presents the functional potential of plant microbiota to address current challenges in crop production addressing this urgent need to bring microbial innovations into practice. Demonstrates microbial ecosystems as an indigenous system for improving plant growth, health and stress resilience Covers all the novel aspects of microbial regulatory mechanism. Key challenges associated with microbial delivery and successful establishment for plant growth promotion and stress avoidance Explores plant microbiome and the modulation of plant defense and ecological dynamics under stressed environment Microbial Diversity in the Genomic Era presents insights on the techniques used for microbial taxonomy and phylogeny, along with their applications and

respective pros and cons. Though many advanced techniques for the identification of any unknown bacterium are available in the genomics era, a far fewer number of the total microbial species have been discovered and identified to date. The assessment of microbial taxonomy and biosystematics techniques discovered and practiced in the current genomics era with suitable recommendations is the prime focus of this book. Discusses the techniques used for microbial taxonomy and phylogeny with their applications and respective pros and cons Reviews the evolving field of bacterial typing and the genomic technologies that enable comparative analysis of multiple genomes and the metagenomes of complex microbial environments Provides a uniform, standard methodology for species designation This book provides a comprehensive overview of different agriculturally important microorganisms and their role as plant biostimulants. Arbuscular Mycorrhizal Fungi, Trichoderma, Cyanobacteria, Endophytes, and Plant growth promoting rhizobacteria have the potential to

promote plant growth, disease management, nutrient acquisition, stress alleviation, and soil health management. Presenting an all-inclusive collection of information, this book will be important for students, academicians, researchers working in the field of sustainable agriculture, microbial technology, and biochemical engineers. It will also be of use for policymakers in the area of food security and sustainable agriculture. Introduces new microorganisms as plant biostimulants. Describes potential mechanisms of plant-microbe interaction for stress alleviation and crop improvement. Provides information about different microbial formulations (consortium) and their application to the alleviation of different abiotic stresses (salt, drought, nutrient deficiency, heavy metal, etc.) in plants. Discusses about psychrophilic microbes, endophytic microbes, and total plant microbiome and their uses as biostimulants for improving plant health. This book explains both the basic science and the applications of biotechnology-derived pharmaceuticals, with special emphasis on their clinical uses. The foundations of pharmaceutical biotechnology lie

mainly in the capability of plants, microorganism, and animals to produce low and high molecular weight compounds useful as therapeutics. Pharmaceutical biotechnology has flourished since the advent of recombinant DNA technology and metabolic engineering, supported by the well-developed bioprocess technology. A large number of monoclonal antibodies and therapeutic proteins have been approved, delivering meaningful contributions to patients' lives, and the techniques of biotechnology are also a driving force in modern drug discovery. Due to this rapid growth in the importance of biopharmaceuticals and the techniques of biotechnologies to modern medicine and the life sciences, the field of pharmaceutical biotechnology has become an increasingly important component in the education of pharmacists and pharmaceutical scientists. This book will serve as a complete one-stop source on the subject for undergraduate and graduate pharmacists, pharmaceutical science students, and pharmaceutical scientists in industry and academia.