
Icar Animal Biotech Previous Year Question Papers

Biotechnological Interventions Augmenting
Livestock Health and Production
Transformation of Agri-Food Systems
Emerging Modalities in Mitigation of Antimicrobial
Resistance
Host Genetics in Viral Pathogenesis and Controls
Breeding, Biotechnology and Seed Production of
Field Crops
Aptamers
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Veterinary Microbiology & Parasitology
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Sustainable Agriculture Reviews
Recent Advances in Animal Virology
Nanotechnology in Modern Animal Biotechnology
Fermented Milk and Dairy Products
Animal Biotechnology
Advances in Animal Experimentation and
Modeling
Handbook on Antimicrobial Resistance
Frontiers in Aquaculture Biotechnology
Emerging Issues in Climate Smart Livestock
Production
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Genomics and Biotechnological Advances in

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Genomic, Proteomics, and Biotechnology

The Impact of Nanoparticles on Agriculture and

Soil

Handbook of Molecular Biotechnology

Stem Cells in Veterinary Science

Objective Genetics, Biotechnology, Biochemistry

And Forestry

Educational Infrastructure for Biotechnology in

India

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Core Competencies of a Veterinary Graduate

Climate Change Impact on Livestock: Adaptation

and Mitigation

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Food Safety and Human Health

Textbook of Animal Biotechnology

Engineering Applications in Livestock Production

Advances in Animal Biotechnology

Dairy Processing: Advanced Research to

Applications

Molecular Biomarkers in Animal Reproduction

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CABRERA LUCIANA

*Biotechnological
Interventions
Augmenting
Livestock
Health and
Production*
Frontiers
Media SA
The book
discusses the
basics of
aptamers and
the advent of
aptamer-
based
technology in
recent times.
The book
covers the
diverse
applications of
aptamers,
such as in
detection of
animal and

plant
pathogens,
disease
diagnosis and
therapeutics,
environmental
contamination
detection etc.
Besides these
applications,
the book also
describes the
use of these
synthetic or
modified DNA,
as drug
delivery
vehicles. The
different
chapters
describe how
the binding
capacity and
specificity of
aptamers can
be exploited
in various
ways. The
book also
discusses how
these
attributes of

aptamers can
outdo the
antibody
technology in
biomedical
and diagnostic
solutions. This
crisp and
concise book
gives the
readers an
insight into
the most
recent
biotechnologic
al applications
of aptamers.
*Transformation
of Agri-Food
Systems*
Springer
Nature
This book
explores the
potential
applications of
animal stem
cells in
veterinary
medicine. It
begins with an
overview of

stem cells and their application in treating various animal diseases, including mastitis. In turn, the book discusses the challenges of using stem cells in regenerative medicine and emphasizes the importance of understanding the action of stem cells and preclinical evidence for ensuring safety and therapeutic efficacy. It also presents methods for the identification, characterizati

on, and quantification of stem cells. Further, it discusses the therapeutic applications of different stem cells, including milk-derived, testicular, and mesenchymal stem cells in veterinary medicine. Lastly, it discusses strategies for and therapeutic applications of genome editing by CRISPER/Cas9 in mammary stem cells. As such, the book offers a valuable resource for students and scientists

working in the veterinary sciences and veterinarians.

Emerging Modalities in Mitigation of Antimicrobial Resistance
Springer
Nature
Exploration in Laboratory Animal Sciences
Understanding Life
Phenomena
updates our knowledge about the newer technologies such as molecular biology, genomics including sequencing, proteomics, transcriptomic s, cell culture,

stem cell culture, transgenesis and their translation to understand systematics and phylogeny of laboratory animals at molecular level. In seven sections Exploration in Laboratory Animal Sciences Understanding Life Phenomena resolves issues of conservation, applications in environment monitoring, production of drugs and others. Comparative research has enabled use of

domestic animal models that translate the advances in basic biosciences to the schemes for human welfare including medicine. Molecular geneticists are unravelling the complexities of mammalian genes and the field of biotechnology is maturing at a fast pace. Additionally, research focused on immunology and animal behavior offer new insight into ways of enhancing animal

welfare. The rise in consumption of animal proteins in addition to the challenges of sustaining our natural resources has given animal scientists a vast array of opportunities to engage in integrative systems-based research for meeting the challenges that behold us. Exploration in Laboratory Animal Sciences Understanding Life Phenomena also discusses the

<p>manipulation of animals as factories for the production of safe foods, drugs, and sensors and others to meet the contemporary challenges faced by mankind in the new world order created by pandemic of Covid 19. It also includes several chapters on the causation and management of certain diseases and impact of microbes on life. Provides insight to newer and futuristic technologies</p>	<p>to understand disease process and drug design by animal models Addresses a wide variety of species and covers a wide variety of topics (such as animal species, the laboratory setting, regulatory guidelines, and ethical considerations) to fully prepare for work with all types of animals Gives a perspective on laboratory animal use that allows to explain the benefits of animal use as</p>	<p>required by veterinary technology program accreditation procedure Includes examples of animal bio-technological techniques (including stem cell and tissue engineering) for their applications to humanity Offers new insight into ways of enhancing animal welfare by the inclusion of research results focused on immunology and laboratory animal behavior</p>
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Host Genetics in Viral Pathogenesis and Controls I
K International Pvt Ltd
Antimicrobial resistance (AMR) is one of the deadliest threats to global public health. This book focuses on dynamics in the landscape of AMR while informing about the latest technologies and strategies to mitigate it. The menace of AMR in different niches, routes of penetration across various domains,

socio-economic impact, and the need for a 'One Health' approach in mitigating AMR has been emphasized. Factors involved in AMR, underlying mechanisms, and pharmacometrics in developing antimicrobials are highlighted. Emphasis is given to emerging technologies that are sustainable, scalable, and applicable to the global community, such as big

data analytics, bioactive agents, phage therapy, and nanotechnology. The book also explores current and alternative treatment strategies to combat AMR, emphasizing the use of nanoparticles to target pathogens and as a viable alternative to antibiotics. *Breeding, Biotechnology and Seed Production of Field Crops*
Frontiers Media SA
High-throughput molecular technologies

("omics") can help to decipher the contributions of different physiological systems and identify candidate molecules that are representative of different physiological pathways thereby allowing the discovery of biomarkers. Notably, the omics technologies along with and computational methods, bioprospecting, and artificial intelligence will continue to lead to better understanding

of biological mechanisms that are responsible for physical attributes, or phenotypes. Research breakthroughs obtained through these technologies can be used to enhance productivity of food animals, meet the increasing demand for animal-sourced foods, enhance high-quality nutrient availability, ensure nutrient safety, mitigate the effects of climate variability,

and result in new technologies that provide continued improvement in food security worldwide. Such breakthroughs are an urgent necessity because over the past 50 years, there has been an unprecedented increase in the world's population, which will reach ten billion by the year 2050. Innovative and technological advancements that enhance all aspects of food

<p>production will arise from basic, fundamental research. Besides food, animal by-products have found many applications in the fields of pharmaceuticals, cosmetics, and household and industrial products. Hence, the need to ameliorate the productivity, reproductivity, growth performance, and disease resistance in animals has created a worldwide interest in gaining a deeper understanding</p>	<p>of animal biology, biotechnology and genomics, and proteomics. The present volume thoroughly discusses the omics studies in domestic and non-domestic animals and their role in mitigation of various challenges ahead. The volume thus focuses on i. Omics (genomics, proteomics, transcriptomics, metabolomics) technologies in identifying, characterizing</p>	<p>biodiversity ii. Role of molecular techniques for improvement of domestic and non-domestic organisms iii. Animal and alternative model systems (using stem cells, tissue engineering, cell free systems, 3D platforms etc.) for studying life phenomena iv. Genetically modified organisms as factories for the products <i>Aptamers</i> Oswaal Books Frontiers in Aquaculture Biotechnology</p>
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presents a broad-spectrum of topics, covering different key aspects of aquaculture. With the rising importance of aquaculture research, evidence-based information is integral in advancing this field. This book provides a solid resource of information on DNA barcoding for fish species authentication and seafood labelling and cell culture, including stem cell culture, in vitro research

using fish cell lines such as in vitro fish meat, reproductive biotechnology, including surrogate technology, gene editing and genetically modified aquaculture species, biofloc technology, and omic technologies such as proteomics, artificial intelligence and biobanking. This book will be a valuable resource to students, researchers and entrepreneurs

interested in a better understanding of this emerging field of aquaculture. Presents hot topic information such as cell line repositories for the conservation of important fish genetic resources. Includes information on climate resilient production systems to improve fish production. Provides the latest research on genome editing in aquaculture

<p>species <u>DARE/ICAR</u> <u>Annual Report</u> Springer Nature Description of the Product: • Crisp Revision with Concept- wise Revision Notes & Mind Maps • 100% Exam Readiness with Previous Years’ Questions from all leading • • • • Olympiads like IMO, NSO, ISO & Hindustan Olympiad. • Valuable Exam Insights with 3 Levels of Questions- Level 1, 2 & Achievers • Concept Clarity with 500+</p>	<p>Concepts & 50+ Concepts Videos • Extensive Practice with Level 1 & Level 2 Practice Papers <u>Veterinary</u> <u>Microbiology</u> <u>& Parasitology</u> Academic Press The second edition of Objective Genetics, Biochemistry and Forestry is an up-to-date version in which many new questions have been added along with those on related topics, such as Natural Selection, Genetics and</p>	<p>Evolution, General Genetics, Plant Breeding, Microscopy, Cell Division, Mendelism, DNA Biotechnology, Biochemistry, Forestry, and Tissue Culture, etc. This book has been designed to assess the candidate’s understanding of the subject. It is perhaps for the first time where questions have four to six choice statements, which are to be understood to find the right answer. One has to</p>
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think and remember what he has learnt to be able to answer the questions. In most of the competitive examinations such as Agriculture Research Services of Indian Council of Agricultural Research, NET, State Eligibility Test and Civil Services Examination, etc. Objective type questions are asked. Also, the entrance test for admission to many universities are totally objective. *Sustainable*

Agriculture Reviews 59 Springer Nature This book focuses on advanced research and technologies in dairy processing, one of the most important branches of the food industry. It addresses various topics, ranging from the basics of dairy technology to the opportunities and challenges in the industry. Following an introduction to dairy processing,

the book takes readers through various aspects of dairy engineering, such as dairy-based peptides, novel milk products and bio-fortification. It also describes the essential role of microorganisms in the industry and ways to detect them, as well as the use of probiotics, and food safety. Lastly, the book examines the challenges faced, especially in terms of

maintaining quality across the supply chain.

Covering all significant areas of dairy science and processing, this interesting and informative book is a valuable resource for post-graduate students, research scholars and industry experts.

Sustainable Agriculture Reviews The Energy and Resources Institute (TERI)

This book examines all advanced

areas of research on fermented milks and includes the most recent references available. It covers the types of products based on fermentation pattern, indigenous products, the microbiological processes involved, starter cultures involved in the production, nutritional and functional aspects, various health benefits associated with these products, and quality

assurance and future prospects. All these issues linked to fermented milk and milk products are discussed in detail, using a global perspective.

Recent Advances in Animal Virology New India Publishing Agency
This book entitled, "Advances in Animal Biotechnology," is a compilation of state-of-the-art in the field of Animal Biotechnology including fishery, that

are not sheltered in depth in earlier publications. It offers an update on avant-garde technologies and advances in key aspects of genetic engineering, metagenomics, assisted reproduction, animal genomics, biotechnology in veterinary health, as well as the role of gut and marine microbial ecosystems in livestock and industrial development. The book is divided broadly into

five different sections, viz., Gut Microbiome and Nutritional Biotechnology, Assisted Reproduction Biotechnology, Livestock Genomics, Health Biotechnology, and Animal Biotechnology in Global Perspective. The book covers the syllabi of Animal Biotechnology courses in various universities, academia and competitive examinations at various levels. Researchers,

Continuing Graduates, and Academicians, Research Institutions, and Biotech Companies will be benefited from this valuable compilation of research. Its broad spectrum makes this work a valuable resource for professionals, researchers, academics and students in the field of veterinary and animal production as well as the biotechnology industry. *Nanotechnology in Modern*

Animal Biotechnology Springer Nature Antimicrobial resistance (AMR) is a global public health threat. The menace of antimicrobial resistance is present across health, animal, agriculture, food, and environment sectors. It, therefore, requires an inter-disciplinary combat approach- the one health approach, envisaged by the FAO-UNEP-WHO-WOAH Quadripartite (Food and Agriculture Organization of the United Nations (FAO), the UN Environment Programme (UNEP), the World Health Organization (WHO) and the World Organisation for Animal Health (WOAH). This comprehensive reference book provides a thorough understanding of antimicrobial resistance across different sectors. It presents deep insights and gives a global perspective on antimicrobial resistance for policymakers. The book offers essential and up-to-date information that enables researchers from multiple fields to design research on antimicrobial resistance. The book discusses molecular mechanisms and antibiotic resistance genes of significant antimicrobial-resistant pathogens, regulatory frameworks available worldwide, and mitigation

strategies across the sectors, including probiotics, prebiotics, antimicrobial peptides, bacteriophages, phytochemical compounds, immunostimulants, vaccines, bacteriocins, etc. It compiles essays from leading experts in the field of antimicrobial resistance research. The book is meant for students and researchers in microbiology, medical microbiology,

and public health. It is also helpful for clinicians and policymakers. Fermented Milk and Dairy Products Springer Nature Food Safety and Human Health provides a framework to manage food safety risks and insure safe food system. This reference takes a reader-friendly approach in presenting the entire range of toxic compounds found naturally in

foods or introduced by industrial contamination or food processing methods. It provides the basic principles of food toxicology and its processing and safety for human health to help professionals and students better understand the real problems of toxic materials. This essential resource will help readers address problems regarding food contamination and safety. It

<p>will be particularly useful for graduate students, researchers and professionals in the agri-food industry. Encompasses the first pedagogic treatment of the entire range of toxic compounds found naturally in foods or introduced by industrial contamination or food processing methods. Features areas of vital concern to consumers, such as the toxicological</p>	<p>implications of food, implications of food processing and its safety to human health. Focuses on the safety aspects of genetically modified foods currently available. <i>Animal Biotechnology</i> Elsevier. The dependency on animal biotechnology in livestock industries has been increased in the recent past. The livestock production research has witnessed</p>	<p>remarkable developments on biotechnological methods to produce the elite animal breeds. The global animal food requirement has been steadily increasing, and animal production needs to be increased as per the global needs. This book covers various aspects of animal biotechnology such as, reproductive biotechnologies in sheep and goats, oogenesis and folliculogenesi</p>
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s and ovarian disorders. This book focusses the discussion on proteomics and metabolomics, and separate chapters were dedicated to discuss these topics. The proteomics studies of animal viruses were discussed in this book, and this would be helpful to understand animal viral pathogenesis. The applications of metabolomics in livestock were discussed with focus on data analysis, identification

of unknown compounds. The purpose of this book is to provide the recent research trends, and convert all this information to usable guide to professionals, researchers and students who are working the research area of animal biotechnology. *Advances in Animal Experimentation and Modeling* Springer Nature With a history that likely dates back to the dawn of human

civilization more than 10,000 years ago, and a record that includes the domestication and selective breeding of plants and animals, the harnessing of fermentation process for bread, cheese, and brewage production, and the development of vaccines against infectious diseases, biotechnology has acquired a molecular focus during the 20th century, particularly following the resolution of

DNA double helix in 1953, and the publication of DNA cloning protocol in 1973, and transformed our concepts and practices in disease diagnosis, treatment and prevention, pharmaceutical and industrial manufacturing, animal and plant industry, and food processing. While molecular biotechnology offers unlimited opportunities for improving human health and well-being, animal

welfare, agricultural innovation and environmental conservation, a dearth of high quality books that have the clarity of laboratory manuals without distracting procedural details and the thoroughness of well-conversed textbooks appears to dampen the enthusiasm of aspiring students. In attempt to fill this glaring gap, Handbook of Molecular

Biotechnology includes four sections, with the first three presenting in-depth coverage on DNA, RNA and protein technologies, and the fourth highlighting their utility in biotechnology. Recognizing the importance of logical reasoning and experimental verification over direct observation and simple description in biotechnological research and development, the Introduction provides

pertinent discussions on key strategies (i.e., be first, be better, and be different), effective thinking (lateral, parallel, causal, reverse, and random), and experimental execution, which have proven invaluable in helping advance research projects, evaluate and prepare research reports, and enhance other scientific endeavors. Key features Presents state-of-the-

art reviews on DNA, RNA and protein technologies and their biotechnological applications Discusses key strategies, effective thinking, and experimental execution for scientific research and development Fills the gap left by detailed-ridden laboratory manuals and insight-lacking standard textbooks Includes expert contributions from international scientists at the forefront

of molecular biotechnology research and development Written by international scientists at the forefront of molecular biotechnology research and development, chapters in this volume cover the histories, principles, and applications of individual techniques/technologies, and constitute stand-alone, yet interlinked lectures that strive to educate as well as to entertain. Besides providing an informative

textbook for tertiary students in molecular biotechnology and related fields, this volume serves as an indispensable roadmap for novice scientists in their efforts to acquire innovative skills and establish solid track records in molecular biotechnology, and offers a contemporary reference for scholars, educators, and policymakers wishing to keep in touch with recent developments

in molecular biotechnology. **Handbook on Antimicrobial Resistance** Frontiers Media SA Zusammenfassung: This edited volume covers all major topics related to agri-food transformation towards sustainability in this era of climate change. The topics cover field crops, horticultural crops, livestock sector, nutritional aspects, application of latest field-based technologies,

and agriculture related policies and institutions. Some of the key topics are: Innovations for Reconfiguring Food Systems; Transforming High-value Food Commodities; Demand-Supply of Agri-food Commodities; Balancing Human Demand and Ecological Sustainability; International Partnership for Transformation of Agri-Food Systems; Transforming Animal Health and Aquatic

Food Systems
for Food
Security;
Climate
Resilient
Agriculture;
Addressing
Nutritional
Security
through
Natural
Resource
Management;
Water
Harvesting
and Improving
Water
Productivity;
Combating
Micronutrient
Deficiencies;
Plant Genetic
Resources for
Food Security
and Nutrition;
Genome
Editing for
Crop
Improvement;
and Biosafety
and
Socioeconomi

c
Consideration
s. Written by
experts, this
book serves in
exchanging
and sharing
the latest
research
findings, ideas
and
experiences
on all aspects
of agri-food
systems to
enable the
formulation of
the ways
forward to
transform our
agri-food
system to
meet the
Sustainable
Development
Goals (SDGs)
of the United
Nations by
2030. The
target
audience
include

academicians,
researchers,
students,
farmers,
entrepreneurs
, policy
makers, and
others
**Frontiers in
Aquaculture
Biotechnolog
y** CRC Press
This book
describes the
importance of
sustainable
livestock
production
from a food
security
perspective in
the changing
climate
scenario. It
covers the
amelioration
of climate
change
impacts and
describes the
various
mitigation

strategies to reduce enteric methane emissions. The book targets sustainable livestock production by covering diverse concepts of amelioration, mitigation, and policy up-gradation. Further, it examines various adverse impacts of climate change on growth, meat, milk, and reproduction in livestock. Most importantly, the book covers novel aspects of

quantifying heat stress response of livestock based on non-invasive methodologies, including infrared thermal imaging, sensor-based applications, hair, urine, and fecal cortisol estimation. Particular emphasis was given to describing the skin-based novel approaches to establish climate resilience in indigenous breeds. The book provides detailed descriptions of

alleviating climate change impacts on shelter management, nutritional interventions, and genetics-based strategies involving advanced genomic tools. Lastly, it highlights the livestock species which could be considered ideal climate-resilient animal models to withstand the adversities associated with climate change. *Emerging Issues in Climate Smart Livestock*

Production National Academies Press This book comprehensively discusses the applications of molecular genetics, functional and structural genomics, and proteomics vis-a-vis bioinformatics, artificial intelligence, and robotics in livestock healthfulness and productivity. It reviews the biotechnological approaches in veterinary sciences for increasing productivity and resistance to disease.

The book emphasizes the approaches based on artificial intelligence to analyze the data collected on animals, pathogens, and their environment. It underscores artificial intelligence applications in disease diagnosis, epidemiological studies, and detecting biological phenomena, including heat-detection, pregnancy, docility, and infections. Further, the book examines the genomics and proteomics approaches for understanding the gut microbiota and the role of pathogen-host interactions in animal health and disease. Lastly, it explores both pathogenic and non-pathogenic microbial transfer between humans, animals, and the environment across one health spectrum.

Essentials of Veterinary Immunology

and Immunopathology Springer Nature Emerging Issues in Climate Smart Livestock Production: Biological Tools and Techniques furnishes a detailed reference on livestock sustainability and the role of biotechnology for creating more sustainable livestock production systems. The book is a collection of scientific techniques, including genetic engineering used to modify and improve animals, fishes, and microorganisms for human benefit. The book is particularly attractive for scientists, researchers, students, educators, and professionals in agriculture, veterinary, and biotechnology science. This book promotes several biotechnological approaches that can easily be evaluated in the field for quality assurance programs beneficial to producing livestock products and overall public health. Biotechnology has the potential to improve the productivity of animals via increased growth, carcass quality and reproduction, improved nutrition and feed utilization, improved food quality and safety, improved animal health and welfare, and reduced waste through more efficient utilization of

resources. Identifies and explores biotechnological approaches for sustainable livestock and fish production. Focuses on strategies for enhancing livestock and fishery productivity and sustainability. Presents the latest research on modern methods and technologies.

Textbook of Veterinary Physiology
Springer Nature

This textbook explores the fundamental qualitative and quantitative aspects of veterinary physiology. It presents the morphological description of the organs, tissues, and cells involved in the physiological system with species variation. The book provides the most up-to-date information and in-depth knowledge in animal physiology. The book addresses a broad range of topics, including the physiology of digestion in monogastric animals, ruminants, and birds, and cardiovascular and respiratory system in different animals. The chapters contain a wealth of information on the areas related to the endocrine system, excretory system, body fluid homeostasis, hematology, male and female reproductive systems, coordination of body functions, and regulation of brain functions and

sense organs. Further, this book acquaints students with advanced topics like immune system, assisted reproductive technology, ovarian dynamics, environmental physiology and thermoregulation, and behavioral physiology. This textbook contains clear illustrations including graphical abstracts and study questions for each chapter making this book a valuable learning resource for veterinary sciences and veterinary medicine students. Further to attract students and create interest in them, interesting facts related to animal physiology have also been highlighted in form of “Know more widgets”.

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