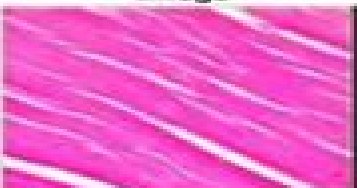
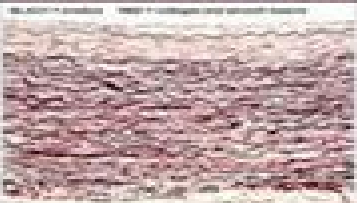


Connective Tissue Proper: *Loose CT*

Name of Tissue	Description	Function	Location	Image
Arelolar CT	• Gel-like matrix • All 3 fibers present • Soft packaging body tissue • Cells: fibroblasts, macrophages, mast cells, some WBCs	• Wraps & cushions organs • Its macrophages phagocytose bacteria • Big role in inflammation • Holds & conveys tissue fluid	• Widely distributed under epithelia e.g. forms Lamina Propria mucous membranes • Packages organs • Surrounds capillaries	
Adipose CT	• Sparser matrix than areolar • Closely packed Adipocytes (fat cells) w/ nuclei pushed to the side by fat droplets	• Provides reserve fuel • Insulated • Supports & protects organs	• Subcutaneous layer under skin • Around kidneys & eyeballs • In bones • In abdomen & breasts	
Reticular CT	• Network of reticular fibers in loose Ground Substance	• Fibers form soft internal skeleton supporting other cells	• Lymphoid organs: lymph nodes, bone marrow, spleen	

Connective Tissue Proper: *Dense CT*

Name of Tissue	Description	Function	Location	Image
Dense Regular CT	• Mostly parallel Collagen fibers • A few Elastin fibers • Major cells type is the fibroblast	• Attaches muscles to bones • Withstands great tensile stress pulling in 1 direction	• Tendons • Most ligaments • Aponeuroses	
Dense Irregular CT	• Mostly irregularly arranged Collagen fibers • Some Elastin fibers • Major cells type is the fibroblast	• Withstands great tensile stress pulling in many directions • Provides structural strength	• Dermis of skin • Submucosa of digestive tract • Fibrous capsules of organs & joints	
Elastic CT	• Dense CT w/ high content of Elastin fibers	• Tensile strength w/ moderate elasticity	• Ligaments connecting adjacent vertebrae (Ligamentum nuchae)	

Section I Tissue Review Answers

Jin-Ying Zhang



Section I Tissue Review Answers:

Embark on a transformative journey with Explore the World with is captivating work, Grab Your Copy of **Section I Tissue Review Answers** . This enlightening ebook, available for download in a convenient PDF format PDF Size: , invites you to explore a world of boundless knowledge. Unleash your intellectual curiosity and discover the power of words as you dive into this riveting creation. Download now and elevate your reading experience to new heights .

https://crm.avenza.com/book/book-search/HomePages/oxford_living_grammar_elementary.pdf

Table of Contents Section I Tissue Review Answers

1. Understanding the eBook Section I Tissue Review Answers
 - The Rise of Digital Reading Section I Tissue Review Answers
 - Advantages of eBooks Over Traditional Books
2. Identifying Section I Tissue Review Answers
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Section I Tissue Review Answers
 - User-Friendly Interface
4. Exploring eBook Recommendations from Section I Tissue Review Answers
 - Personalized Recommendations
 - Section I Tissue Review Answers User Reviews and Ratings
 - Section I Tissue Review Answers and Bestseller Lists
5. Accessing Section I Tissue Review Answers Free and Paid eBooks
 - Section I Tissue Review Answers Public Domain eBooks
 - Section I Tissue Review Answers eBook Subscription Services
 - Section I Tissue Review Answers Budget-Friendly Options

6. Navigating Section I Tissue Review Answers eBook Formats
 - ePub, PDF, MOBI, and More
 - Section I Tissue Review Answers Compatibility with Devices
 - Section I Tissue Review Answers Enhanced eBook Features
7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Section I Tissue Review Answers
 - Highlighting and Note-Taking Section I Tissue Review Answers
 - Interactive Elements Section I Tissue Review Answers
8. Staying Engaged with Section I Tissue Review Answers
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Section I Tissue Review Answers
9. Balancing eBooks and Physical Books Section I Tissue Review Answers
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Section I Tissue Review Answers
10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
11. Cultivating a Reading Routine Section I Tissue Review Answers
 - Setting Reading Goals Section I Tissue Review Answers
 - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Section I Tissue Review Answers
 - Fact-Checking eBook Content of Section I Tissue Review Answers
 - Distinguishing Credible Sources
13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
14. Embracing eBook Trends
 - Integration of Multimedia Elements

- Interactive and Gamified eBooks

Section I Tissue Review Answers Introduction

In today's digital age, the availability of Section I Tissue Review Answers books and manuals for download has revolutionized the way we access information. Gone are the days of physically flipping through pages and carrying heavy textbooks or manuals. With just a few clicks, we can now access a wealth of knowledge from the comfort of our own homes or on the go. This article will explore the advantages of Section I Tissue Review Answers books and manuals for download, along with some popular platforms that offer these resources. One of the significant advantages of Section I Tissue Review Answers books and manuals for download is the cost-saving aspect. Traditional books and manuals can be costly, especially if you need to purchase several of them for educational or professional purposes. By accessing Section I Tissue Review Answers versions, you eliminate the need to spend money on physical copies. This not only saves you money but also reduces the environmental impact associated with book production and transportation. Furthermore, Section I Tissue Review Answers books and manuals for download are incredibly convenient. With just a computer or smartphone and an internet connection, you can access a vast library of resources on any subject imaginable. Whether you're a student looking for textbooks, a professional seeking industry-specific manuals, or someone interested in self-improvement, these digital resources provide an efficient and accessible means of acquiring knowledge. Moreover, PDF books and manuals offer a range of benefits compared to other digital formats. PDF files are designed to retain their formatting regardless of the device used to open them. This ensures that the content appears exactly as intended by the author, with no loss of formatting or missing graphics. Additionally, PDF files can be easily annotated, bookmarked, and searched for specific terms, making them highly practical for studying or referencing. When it comes to accessing Section I Tissue Review Answers books and manuals, several platforms offer an extensive collection of resources. One such platform is Project Gutenberg, a nonprofit organization that provides over 60,000 free eBooks. These books are primarily in the public domain, meaning they can be freely distributed and downloaded. Project Gutenberg offers a wide range of classic literature, making it an excellent resource for literature enthusiasts. Another popular platform for Section I Tissue Review Answers books and manuals is Open Library. Open Library is an initiative of the Internet Archive, a non-profit organization dedicated to digitizing cultural artifacts and making them accessible to the public. Open Library hosts millions of books, including both public domain works and contemporary titles. It also allows users to borrow digital copies of certain books for a limited period, similar to a library lending system. Additionally, many universities and educational institutions have their own digital libraries that provide free access to PDF books and manuals. These libraries often offer academic texts, research papers, and technical manuals, making them invaluable resources for students and researchers. Some notable examples include MIT OpenCourseWare, which offers free

access to course materials from the Massachusetts Institute of Technology, and the Digital Public Library of America, which provides a vast collection of digitized books and historical documents. In conclusion, Section I Tissue Review Answers books and manuals for download have transformed the way we access information. They provide a cost-effective and convenient means of acquiring knowledge, offering the ability to access a vast library of resources at our fingertips. With platforms like Project Gutenberg, Open Library, and various digital libraries offered by educational institutions, we have access to an ever-expanding collection of books and manuals. Whether for educational, professional, or personal purposes, these digital resources serve as valuable tools for continuous learning and self-improvement. So why not take advantage of the vast world of Section I Tissue Review Answers books and manuals for download and embark on your journey of knowledge?

FAQs About Section I Tissue Review Answers Books

What is a Section I Tissue Review Answers PDF? A PDF (Portable Document Format) is a file format developed by Adobe that preserves the layout and formatting of a document, regardless of the software, hardware, or operating system used to view or print it. **How do I create a Section I Tissue Review Answers PDF?** There are several ways to create a PDF: Use software like Adobe Acrobat, Microsoft Word, or Google Docs, which often have built-in PDF creation tools. Print to PDF: Many applications and operating systems have a "Print to PDF" option that allows you to save a document as a PDF file instead of printing it on paper. Online converters: There are various online tools that can convert different file types to PDF. **How do I edit a Section I Tissue Review Answers PDF?** Editing a PDF can be done with software like Adobe Acrobat, which allows direct editing of text, images, and other elements within the PDF. Some free tools, like PDFescape or Smallpdf, also offer basic editing capabilities. **How do I convert a Section I Tissue Review Answers PDF to another file format?** There are multiple ways to convert a PDF to another format: Use online converters like Smallpdf, Zamzar, or Adobe Acrobats export feature to convert PDFs to formats like Word, Excel, JPEG, etc. Software like Adobe Acrobat, Microsoft Word, or other PDF editors may have options to export or save PDFs in different formats. **How do I password-protect a Section I Tissue Review Answers PDF?** Most PDF editing software allows you to add password protection. In Adobe Acrobat, for instance, you can go to "File" -> "Properties" -> "Security" to set a password to restrict access or editing capabilities. Are there any free alternatives to Adobe Acrobat for working with PDFs? Yes, there are many free alternatives for working with PDFs, such as: LibreOffice: Offers PDF editing features. PDFsam: Allows splitting, merging, and editing PDFs. Foxit Reader: Provides basic PDF viewing and editing capabilities. How do I compress a PDF file? You can use online tools like Smallpdf, ILovePDF, or desktop software like Adobe Acrobat to compress PDF files without significant quality loss. Compression reduces the file size, making it easier to share and download. Can I fill out forms in a PDF file? Yes, most PDF viewers/editors like Adobe

Acrobat, Preview (on Mac), or various online tools allow you to fill out forms in PDF files by selecting text fields and entering information. Are there any restrictions when working with PDFs? Some PDFs might have restrictions set by their creator, such as password protection, editing restrictions, or print restrictions. Breaking these restrictions might require specific software or tools, which may or may not be legal depending on the circumstances and local laws.

Find Section I Tissue Review Answers :

~~oxford living grammar elementary~~

~~oxford english guide xi~~

~~oxford latin course part answers~~

~~p2014 physics memo fanal axam grade 11~~

owners manual samsung refrigerator

oxford modern english teachers guide class 2

~~p1130 nissan maxima code~~

~~owners manual for jeep liberty~~

~~owners manual for honda eu6500is~~

~~owners manual ford escape 2009 xlt~~

owners manual ls55 new holland

owners manual01 yukon denali

owners manual lancia delta

~~owners manual for komatsu forklift~~

p0300 fault code peugeot 206

Section I Tissue Review Answers :

human design entdecke die person die du wirklich bist ein - Nov 04 2022

web human design entdecke die person die du wirklich bist ein revolutionäres neues system zur enthüllung der dna deiner wahren natur author chetan parkyn publisher

human design entdecke die person die du wirklich bist - Sep 14 2023

web human design entdecke die person die du wirklich bist parkyn chetan isbn 9783899018493 kostenloser versand für alle bücher mit versand und verkauf duch

human design entdecke die person die du wirklich bist - Mar 08 2023

web human design entdecke die person die du wirklich bist ebook written by chetan parkyn read this book using google play books app on your pc android ios devices

human design entdecke die person die du wirklich bist - Apr 09 2023

web human design entdecke die person die du wirklich bist on amazon com au free shipping on eligible orders human design entdecke die person die du wirklich bist

human design entdecke die person die du wirklich bist - Sep 02 2022

web human design entdecke die person die du wirklich bist chetan parkyn verlag lüchow verlag mrz 2015 2015 isbn 10 3899018494 isbn 13 9783899018493 neu

pdf human design von chetan parkyn ebook perlego - Jun 30 2022

web human design dieses buch jetzt lesen buch teilen 320 seiten german epub handyfreundlich und pdf Über ios und android verfügbar ebook epub human

human design entdecke die person die du wirklich bist - Jun 11 2023

web may 22 2021 introducing human design the revolutionary system that reveals the personality blueprint human design entdecke die person die du wirklich bist by

what is human design everything you need to know about the - Mar 28 2022

web in the human design system the antithesis of your authentic self is known as the not self one of the primary objectives of the human design system is to combat the

human design entdecke die person die du wirklich bist - Dec 05 2022

web human design entdecke die person die du wirklich bist ebook parkyn chetan bahlinger anna amazon de kindle shop

human design entdecke die person die du wirklich bist - Oct 03 2022

web mar 23 2015 fragen die wir alle uns häufig stellen human design hilft den antworten auf diese fragen näher zu kommen die methode verbindet moderne wissenschaftliche

human design entdecke die person die du wirklich bist buchtipp - Aug 13 2023

web in diesem blog artikel erfährst du alles wichtige über eines der bekanntesten bücher human design entdecke die person die du wirklich bist du erhältst von mir eine

human design entdecke die person die du wirklich bist - May 10 2023

web combining profound experiences and insights chetan parkyn and carola eastwood have written a third human design book the book of destinies discover the life you were

human design entdecke die person die du wirklich bist - May 30 2022

web human design entdecke die person die du wirklich bist german edition ebook parkyn chetan bahlinger anna amazon ca kindle store

human design entdecke die person die du wirklich bist - Aug 01 2022

web buy human design entdecke die person die du wirklich bist german edition read kindle store reviews amazon com

human design entdecke die person die du wirklich bist pdf - Oct 15 2023

web mar 23 2015 chapter 15 index chapter 16 Über den autor das bin ich wer bin ich wirklich wie treffe ich richtige entscheidungen was ist meine aufgabe in der welt fragen die wir alle uns häufig stellen human design hilft den antworten auf diese

human design entdecke die person die du wirklich bist - Jan 06 2023

web abebooks com human design entdecke die person die du wirklich bist 9783899018493 by parkyn chetan and a great selection of similar new used and

3 pengertian human design profil pencipta manfaat dan - Jan 26 2022

web jan 13 2022 the human design is a contemporary new design concept developing from human orientation pencipta sistem human design pencipta sistem human design

human design entdecke die person die du wirklich bist - Jul 12 2023

web mar 16 2015 human design hilft den antworten auf diese fragen nher zu kommen die methode verbindet moderne wissenschaftliche erkenntnisse aus der quantenphysik und

apa human design aplikasi dan manfaatnya untuk anda anak - Feb 24 2022

web human design bersifat dualitas seperti yin dan yang siang dan malam panas dan dingin laki laki dan perempuan begitu juga dengan human design yang memetakan sifat

human design entdecke die person die du wirklich bist - Feb 07 2023

web buy human design entdecke die person die du wirklich bist by parkyn chetan isbn 9783899018493 from amazon s book store everyday low prices and free delivery on

my human design - Apr 28 2022

web human design is the roadmap on how to live yours discover your chart the world floods us with messages about who we should be in order to survive and thrive in this

bioinformatics for beginners genes genomes molecular - Apr 20 2022

web bioinformatics of genome evolution from ancestral to modern metabolism phylogenomics and comparative genomics to understand microbial evolution bioinformatics

buy bioinformatics for beginners genes genomes molecular - Oct 27 2022

web genomes the term genome refers to the complete complement of dna for a given species the human genome consists of 23 pairs of chromosomes mosquitos have 3 pairs

bioinformatics for beginners genes genomes molecular - Jun 03 2023

web jan 1 2014 request pdf bioinformatics for beginners genes genomes molecular evolution databases and analytical tools
bioinformatics for beginners provides a

bioinformatics for beginners electronic resource genes - Dec 17 2021

bioinformatics for geneticists wiley online books - Sep 25 2022

web bioinformatics for beginners genes genomes molecular evolution databases and analytical tools ebook choudhuri
supratim amazon in kindle store

[bioinformatics for beginners 1st edition elsevier](#) - Apr 01 2023

web get this from a library bioinformatics for beginners genes genomes molecular evolution databases and analytical tools
supratim choudhuri michael kotewicz

bioinformatics for beginners genes genomes molecular - May 02 2023

web may 9 2014 bioinformatics for beginners genes genomes molecular evolution databases and analytical tools provides a coherent and friendly treatment of

bioinformatics for beginners genes genomes molecular - Jan 18 2022

web chapter 1 fundamentals of genes and genomes pdf 761 5kb chapter 2 fundamentals of molecular evolution pdf 686 7kb
chapter 3 genomic technologies pdf 1019 kb

[bioinformatics for beginners genes genomes molecular](#) - Aug 05 2023

web may 26 2014 bioinformatics for beginners genes genomes molecular evolution databases and analytical tools provides a coherent and friendly treatment of

bioinformatics for beginners genes genome molecular - Sep 06 2023

web may 9 2014 bioinformatics for beginners genes genomes molecular evolution databases and analytical tools provides a coherent and friendly treatment of

bioinformatics for beginners sciencedirect - Oct 07 2023

web bioinformatics for beginners genes genomes molecular evolution databases and analytical tools provides a coherent and friendly treatment of bioinformatics for any student or scientist within biology who has not routinely performed bioinformatic analysis

bioinformatics finding genes national human genome - Nov 27 2022

web mar 9 2007 the only book specifically addressing the bioinformatics needs of geneticists more than 50 of chapters are completely new contributions dramatically revised

bioinformatics for beginners genes genomes molecu - Mar 20 2022

web bioinformatics for beginners bioinformatics for beginners genes genomes molecular evolution databases and analytical tools supratim choudhuri

bioinformatics for beginners genes genomes molecular - Jul 24 2022

web aug 28 2020 keywords genomics bioinformatics gene expression medical genetics human population genetics computational models for molecular mechanisms gene

bioinformatics for beginners genes genomes molecular - Nov 15 2021

bioinformatics for beginners genes genomes - Jul 04 2023

web includes bibliographical references and index contents front cover bioinformatics for beginners copyright page contents preface acknowledgment 1 fundamentals of

lecture 1 introduction to bioinformatics university of wisconsin - Aug 25 2022

web bioinformatics for beginners bioinformatics for beginners genes genomes molecular evolution databases and analytical tools supratim choudhuri

bioinformatics for beginners genes genomes - Feb 28 2023

web bioinformatics for beginners genes genomes molecular evolution databases and analytical tools ebook 2014 worldcat org search for library items create lists

bioinformatics methods in medical genetics and genomics - May 22 2022

web bioinformatics for beginners genes genomes molecu molecular biology sep 02 2023 molecular biology offers a fresh distinctive approach to the study of molecular biology

bioinformatics for beginners genes genomes molecular - Jan 30 2023

web mar 5 2015 one of the most important aspects of bioinformatics is identifying genes within a long dna sequence until the development of bioinformatics the only way to

bioinformatics for beginners genes genomes molecular - Dec 29 2022

web replacement bioinformatics for beginners genes genomes molecular evolution databases and analytical tools provides a coherent and friendly treatment of

bioinformatics for beginners genes genomes molecu - Feb 16 2022

web machine generated contents note 1 fundamentals of genes and genomes 1 1 biological macromolecules genomics and

bioinformatics 1 2 dna as the universal genetic

bioinformatics for beginners genes genomes molecular - Jun 22 2022

web by supratim choudhuri bioinformatics for beginners pdf genes genomes molecular evolution databases and analytical tools provides a coherent and friendly treatment of

fish feed nutrition and its management in aquaculture - Jun 04 2022

web apr 4 2023 prevention of nutrient deficiency and the occurrence of disease in fish can be achieved only by providing adequate nutrients this study shows the effect of balanced feed on fish health

fish nutrition freshwater aquaculture extension - Jul 05 2022

web aug 26 2019 variety of fish feeds courtesy of laura tiu ohio state university fish need energy to maintain basic metabolic activities and to support growth reproduction activity and health proteins carbohydrates and lipids the macronutrients provide this energy and also some essential nutrients

aquaculture nutrition wiley online library - Jan 31 2022

web jan 1 2022 aquaculture nutrition will continue to undergo a rigorous peer review process ensuring that quality remains high manuscripts published after january 1 2022 will be published as open access articles making them immediately free

fish nutrition in aquaculture springerlink - Aug 18 2023

web about this book aquaculture is a growing industry a vital component of the subject is feeding the organisms under cultivation this book provides a thorough review of the scientific basis and applied aspects of fish nutrition in a user friendly format

an overview on significance of fish nutrition in aquaculture industry - Dec 30 2021

web like terrestrial animals around 40 essential nutrients are required by the aquatic organisms which includes protein carbohydrate fatty acids vitamins minerals growth factors and other energy sources essentially for maintaining growth reproduction and other normal physiological functions

fish nutrition an overview sciencedirect topics - Sep 07 2022

web fish nutrition is crucial for the aquaculture sector with studies gaining the highest interest as the demand for farmed fish increased jobling 2015

precision nutritional regulation and aquaculture sciencedirect - Dec 10 2022

web nov 1 2020 appropriate statistical models can provide an accurate assessment of the dynamic nutritional needs of fish at different developmental stages thereby realizing individualized fish nutrition management nutritional research must include an effective and appropriate statistical design and analysis

metabolomics and fish nutrition a review in the context of - May 15 2023

web nov 29 2018 growth trials and body composition data provide valuable indicators of fish nutritional status while omics technologies may contribute to a better understanding of fish nutrition and help to demonstrate how feed and nutrients act in fish metabolism

fish nutrition sciencedirect - Jan 11 2023

web features expansive updates to the previous edition including a new chapter dedicated to diet analysis and evaluation addresses the roles of fish nutrition and feeds on sustainability and the environmental impacts of aquaculture covers basic nutritional biochemistry and applied nutritional topics

frontiers editorial fish nutrition metabolism and physiology - Mar 01 2022

web jan 11 2022 aquatic foods from marine and freshwater play a significant role in nutrition of billions of people globally particularly during the covid 19 pandemic which has jeopardized the global food security tigchelaar et al 2021

fish nutrition sciencedirect - Mar 13 2023

web this third edition of fish nutrition is a comprehensive treatise on nutrient requirements and metabolism in major species of fish used in aquaculture or scientific experiments it covers nutrients required and used in cold water warm water fresh water and marine species for growth and reproduction

nutrition in tropical aquaculture essentials of fish nutrition feeds - Apr 02 2022

web this book is intended to teach undergraduate students the essentials of aquaculture nutrition feed formulation and feeding management it serves as a reference book for researchers in aquaculture aquaculturists fish farmers and aquaculture nutritionists for the basic understanding of the materials presented it is essential that the students

the future of aquatic protein implications for protein sources in - Nov 09 2022

web nov 22 2019 fish are valuable sources of nutrients and micronutrients and play an important role in human nutrition and the global food supply 9 16 17 in addition to being a rich source of high quality protein and essential amino acids fish are a dietary source of health promoting omega 3 or n 3 long chain polyunsaturated fatty acids lc pufa

fish nutrition research past present and future aquaculture - Feb 12 2023

web jan 14 2015 fish nutrition research currently encompasses studies of feed intake and the physiological mechanisms involved in its regulation nutrient requirements and interactions metabolic pathways and nutrient utilization fish growth reproduction and

nutrition and health of aquaculture fish pubmed - Aug 06 2022

web nutrition and health of aquaculture fish under intensive culture conditions fish are subject to increased stress owing to environmental water quality and hypoxia and health conditions parasites and infectious diseases all these factors have negative impacts on fish well being and overall performance with consequent economic losses

[fish nutrition in aquaculture s s de silva t a anderson](#) - Jun 16 2023

web nov 30 1994 springer science business media nov 30 1994 science 320 pages aquaculture is a growing industry a vital component of the subject is feeding the organisms under cultivation this book

nutrition and environment interactions in aquaculture - May 03 2022

web jan 3 2023 the efficient conversion of feed into fish or shellfish biomass is the primary goal of any fed aquaculture practice however the generation of waste outputs are inherently associated with this process cho and bureau 1997 nutrition feeds and feeding practices are thus considered to be a vital cog in the bidirectional relationship between

[aquaculture nutrition hindawi](#) - Apr 14 2023

web aquaculture nutrition provides a global perspective on the nutrition of all cultivated aquatic animals topics range from extensive aquaculture to laboratory studies of nutritional biochemistry and physiology

fish nutrition 4th edition elsevier - Oct 08 2022

web oct 19 2021 offer details description fish nutrition fourth edition is an up to date authoritative presentation of all key elements of the nutrition of fish and crustaceans as aquaculture is rapidly expanding more than 200 herbivorous and carnivorous species occupy a diverse range of ecological niches and have therefore evolved to utilize a wide

pdf fish nutrition in aquaculture academia edu - Jul 17 2023

web this review was conducted to investigate the significance underlying causes and negative effects of nutritional diseases of fish on aquaculture production and health safety information were collected from different secondary