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#### ISBN-13: 978-93-94707-03-0 (paperback)

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MRP: ₹250/-





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#### Unit I

#### **COST ACCOUNTING**

Meaning, Definition, Limitation of Financial Accounting Objectives, Advantages, Disadvantages and Limitation of cost Accounting Difference between Financial & Cost

#### 1. COST ACCOUNTING

Cost accounting is a method of managerial accounting which aims to capture the total production cost of a business by measuring the variable costs of each production phaseas well as fixed costs, such as a lease expense. Historians believe that cost accounting was first introduced during the industrial revolution when the new global supply and demand economies forced producers to begin monitoring their fixed and variable costs to automate their manufacturing processes.

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ISBN: 978-93-94707-03-0



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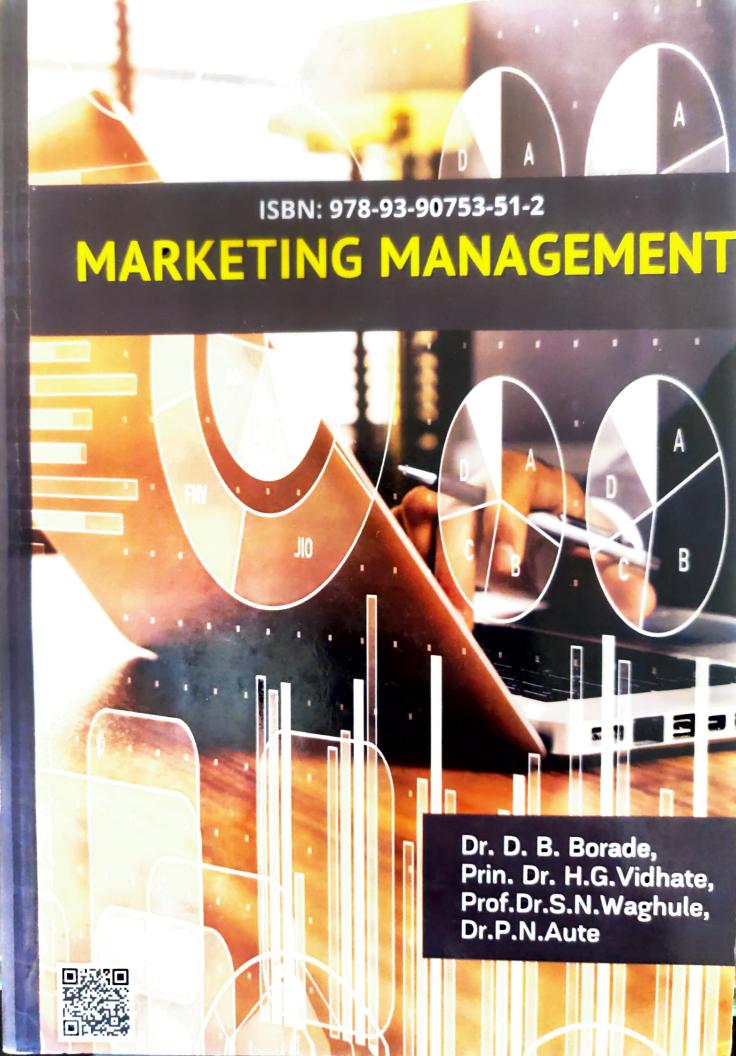
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**Xoffencer Publication** 

838- Laxmi Colony, Dabra, Gwalior, Madhya Pradesh, 475110 www.xoffencerpublication.in







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ISBN: 978-93-90753-51-2

Published by Novateur Publication, Pune, M.S., India. First Printing, 2022.

## **Novateur Publication**

466, Sadashiv Peth, Pune, Maharashtra, India-411030 www.novateurpublication.com

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## CHAPTER I

## INTRODUCTION

## 1.1 INTRODUCTION

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We are respected thankful to the Hon. Bhimraoji Dhonde Saheb, Former President of Anand Charitable Sanstha Ashti's for his encouragement and support to complete this work. Finally, my sincere thanks to the Prin. Dr. H. G. Vidhate and Publishers, Distributors, for their acceptance in publishing the book.

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## Chapter 1

## FINANCIAL MANAGEMENT OBJECTIVES

#### 1.1 OVERVIEW

Financial management is the managerial activity concerned with the planning and control of a company's financial resources. It is also known as financial planning and control. Therefore, the fundamental goal of a corporation is to maximise the wealth of its owners via the purchase, financing, and administration of a wide range of different assets. The goal for financial managers like Solomon Ezra and J. John Pringle is to make the most of their capital money as efficiently as possible. For a company's Financial Management department to operate smoothly, the funds necessary for that purpose must be obtained and used in the most efficient manner possible.

Financial Management is concerned with the procurement and financing of long- and short-term credit for the company's operations. In order to do this, it handles a broad variety of concerns, including asset allocation, liability selection, and the size of the organisation. When making these decisions, consideration is given to funding flows and the effects of those flows on management.

The capacity of a corporation to compete in today's global economy is dependent on its ability to generate financial resources. All forms of business endeavours need the use of financial resources to succeed. The lifeblood of a business organisation is referred to in this manner as well. Regardless

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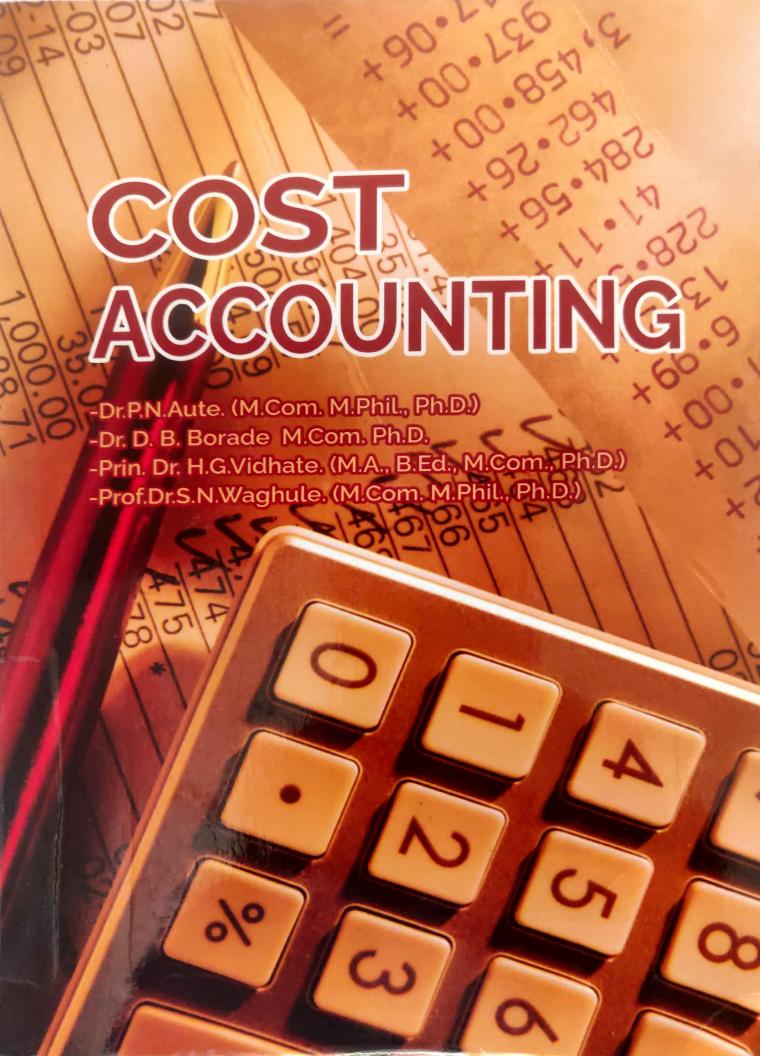
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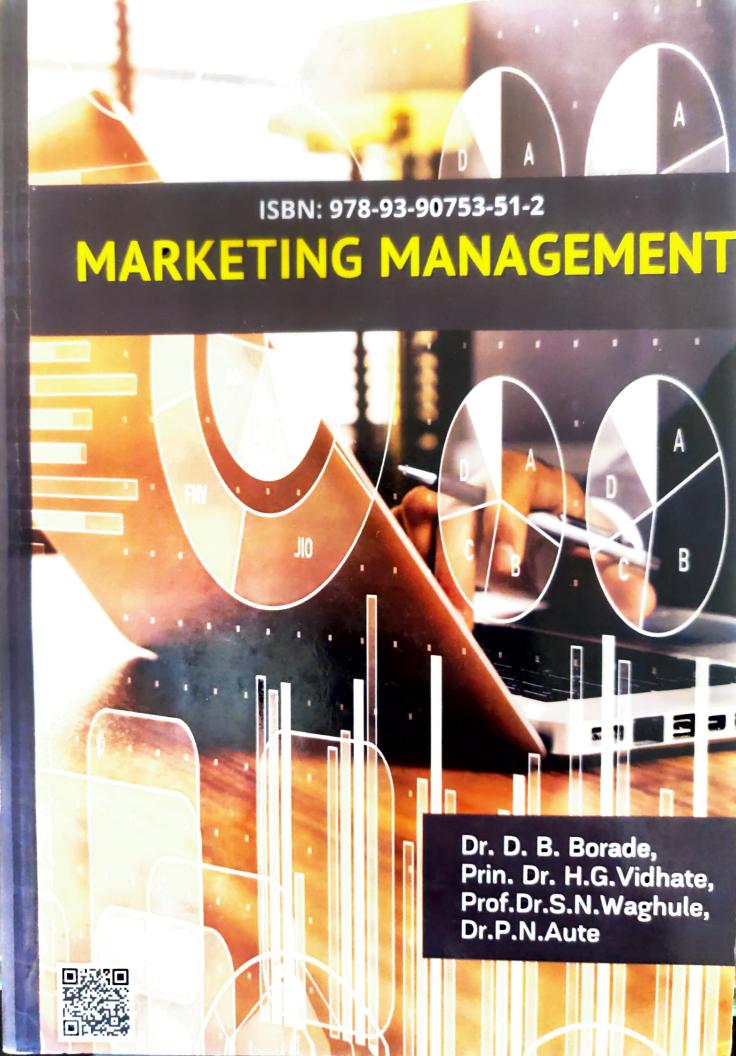
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## CHAPTER I

## INTRODUCTION

## 1.1 INTRODUCTION

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## Chapter 1

## FINANCIAL MANAGEMENT OBJECTIVES

#### 1.1 OVERVIEW

Financial management is the managerial activity concerned with the planning and control of a company's financial resources. It is also known as financial planning and control. Therefore, the fundamental goal of a corporation is to maximise the wealth of its owners via the purchase, financing, and administration of a wide range of different assets. The goal for financial managers like Solomon Ezra and J. John Pringle is to make the most of their capital money as efficiently as possible. For a company's Financial Management department to operate smoothly, the funds necessary for that purpose must be obtained and used in the most efficient manner possible.

Financial Management is concerned with the procurement and financing of long- and short-term credit for the company's operations. In order to do this, it handles a broad variety of concerns, including asset allocation, liability selection, and the size of the organisation. When making these decisions, consideration is given to funding flows and the effects of those flows on management.

The capacity of a corporation to compete in today's global economy is dependent on its ability to generate financial resources. All forms of business endeavours need the use of financial resources to succeed. The lifeblood of a business organisation is referred to in this manner as well. Regardless

#### ISBN: 978-93-94707-08-5



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गोकुळवाडी, औरंगपुरा, औरंगाबाद.

दूरध्वनी क्र.: ०२४-२३२९२०४

भ्रमणध्वनी : ०९९७००६७९७१

ई-मेल : educationalpub@gmail.com

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मुद्रणस्थळ : राजमुद्रा ऑफसेट, औरंगाबाद.

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## Impact of Globalization on Higher Education

Professor S.N. Waghule

Abstract: Globalization trends and innovations in the instructional technologies are widely believed to be creating new markets and forcing a revolution in higher education. Much of the rhetoric of "globalists" has presented a simplistic analysis of a paradigm shift in higher education markets and the way nations and institutions deliver educational services. Globalization does offer substantial and potentially sweeping changes to national systems of higher education, but there is no uniform influence on nation-states or institutions. All globalization is in fact subject to local influences. A growing body of case studies point to the complexity of globalization in influencing the future of higher education. The objective of this analysis is to provide a framework for a more encouraging, and a more nuanced, understanding of this phenomenon and the true influence of globalization and the future path for higher education. (Keywords: Globalization, Governing and managing higher education systems.)

### Introduction:

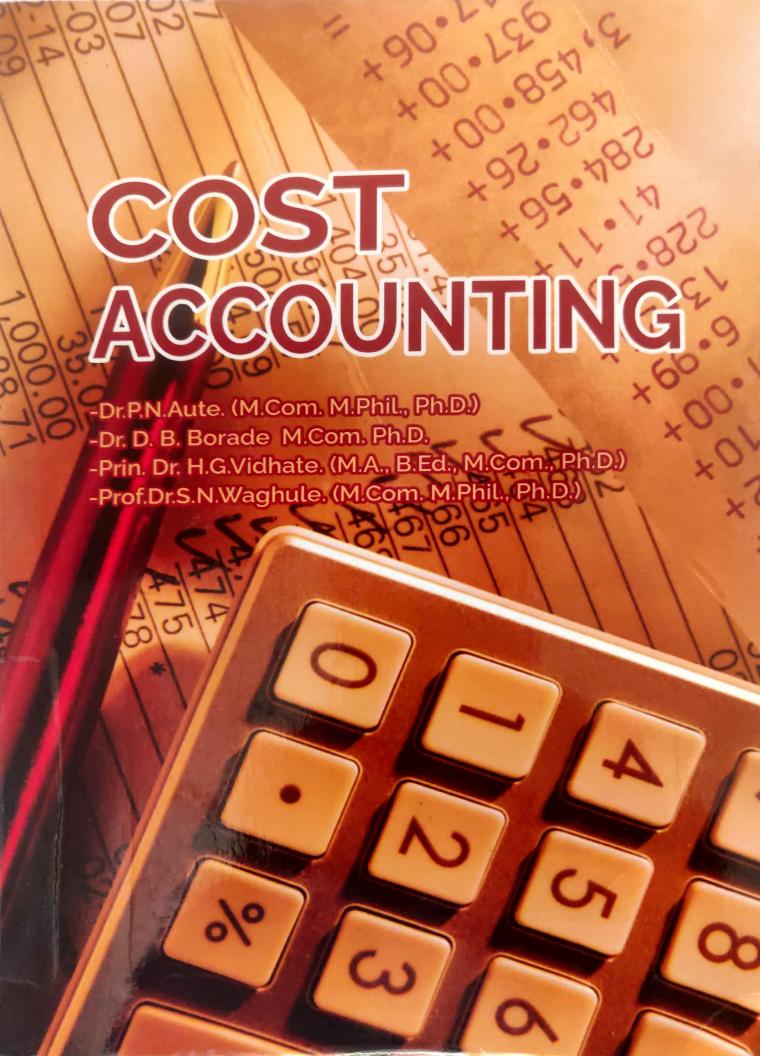
Higher education has become a huge enterprise. World-wide tens of millions of students are enrolled in more than 15,000 public institutions, and a growing number of private institutions. Governing and managing higher education systems at all relevant levels especially system level, central institutional level, faculty and department level, program level) has become a profession on its own. However, the possibilities for higher education leaders and managers at all relevant levels inside and outside the higher education institutions to prepare and train themselves with respect to the governance and management side of their job are limited, especially Global initiatives promoting greater corporate social responsibility has made specific references to education as a sector or as an issue

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# Unit I

## **COST ACCOUNTING**

Meaning, Definition, Limitation of Financial Accounting Objectives, Advantages, Disadvantages and Limitation of cost Accounting Difference between Financial & Cost

## 1. COST ACCOUNTING

Cost accounting is a method of managerial accounting which aims to capture the total production cost of a business by measuring the variable costs of each production phaseas well as fixed costs, such as a lease expense. Historians believe that cost accounting was first introduced during the industrial revolution when the new global supply and demand economies forced producers to begin monitoring their fixed and variable costs to automate their manufacturing processes.

Cost accounting allowed rail and steel companies to manage costs and make themselves more competitive. By the early 20th century, cost accounting had become a widely discussed subject in the literature of business management. A company's internal management department uses cost accounting to define both variable and fixed costs associated with the manufacturing process. It will first individually calculate and reportthese costs, then compare input costs with production results to assist in assessing financial performance and in making potential business decisions.

Cost accounting includes several forms of costs which are listed below.

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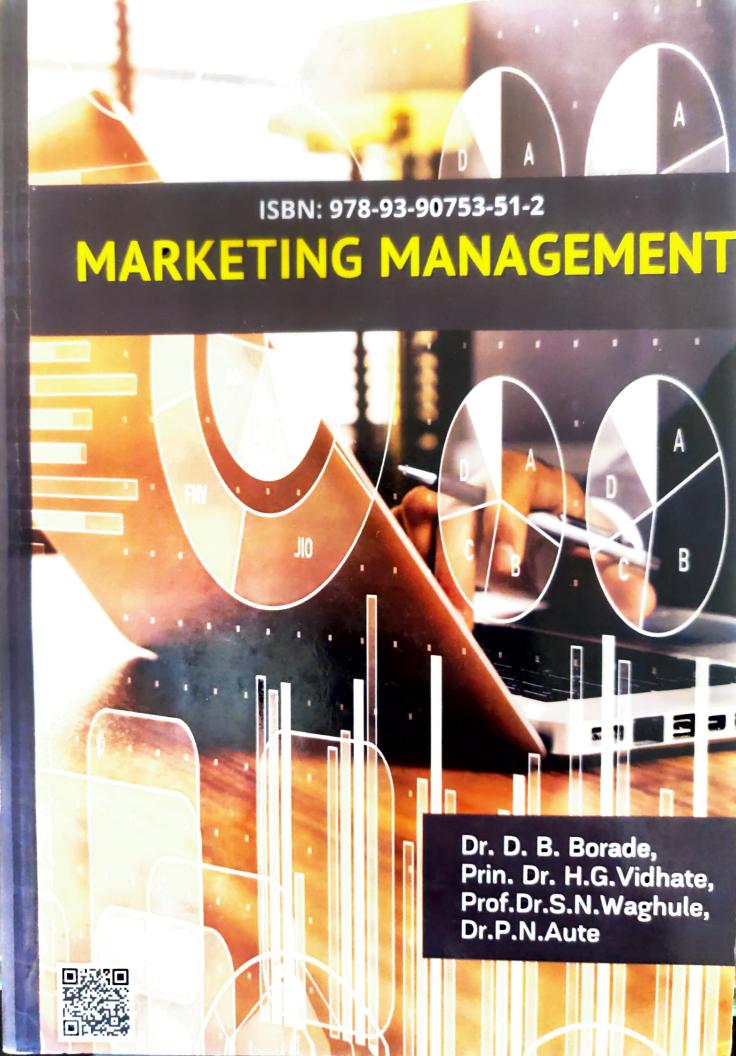
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ISBN: 978-93-90753-51-2

Published by Novateur Publication, Pune, M.S., India. First Printing, 2022.

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466, Sadashiv Peth, Pune, Maharashtra, India-411030 www.novateurpublication.com

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# CHAPTER I

# INTRODUCTION

# 1.1 INTRODUCTION

Marketing is just about as old as civilization. However marketing is discussed and talked about in business terms today, it's starting point returns to the old human advancement when man utilized images, signs, and material ancient rarities to execute and speak with others. Present day marketing spins around the ideas, which are age-old. The main signs man-made to speak with others brought forth marketing. The advancement of marketing has made it an organized discipline to study; if not, marketing existed in the antiquated past. Marketing was likewise utilized as an equivalent word for the craft of selling before. Indeed, even today much disarray exists among marketing and selling among understudies of management and specialists, in regards to the two prevailing methods of business and trade. This section is an endeavor to explain the questions in the understudy's psyche with respect to what marketing is; the way unique it is from selling and how marketing has advanced throughout some stretch of time and has come to be known as present day marketing. The understudies will likewise be presented to the genuine significance of client direction, client center, and comparable ideas that permit marketing to score higher than selling.

# 1.2 WHAT DO WE MEAN BY MARKETING?

Man is a social creature. Human necessities and needs are molded by the transaction of different social powers. Marketing develops through this impossible to miss social framework. It includes connections among citizenry. It helps business

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We are respected thankful to the Hon. Bhimraoji Dhonde Saheb, Former President of Anand Charitable Sanstha Ashti's for his encouragement and support to complete this work. Finally, my sincere thanks to the Prin. Dr. H. G. Vidhate and Publishers, Distributors, for their acceptance in publishing the book.

ISBN: 978-93-90753-51-2



Published by Novateur Publication 466, Sadashiv Peth, M.S.India-411030

# FINANCIAL MANAGEMENT



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# Chapter 1

# FINANCIAL MANAGEMENT OBJECTIVES

# 1.1 OVERVIEW

Financial management is the managerial activity concerned with the planning and control of a company's financial resources. It is also known as financial planning and control. Therefore, the fundamental goal of a corporation is to maximise the wealth of its owners via the purchase, financing, and administration of a wide range of different assets. The goal for financial managers like Solomon Ezra and J. John Pringle is to make the most of their capital money as efficiently as possible. For a company's Financial Management department to operate smoothly, the funds necessary for that purpose must be obtained and used in the most efficient manner possible.

Financial Management is concerned with the procurement and financing of long- and short-term credit for the company's operations. In order to do this, it handles a broad variety of concerns, including asset allocation, liability selection, and the size of the organisation. When making these decisions, consideration is given to funding flows and the effects of those flows on management.

The capacity of a corporation to compete in today's global economy is dependent on its ability to generate financial resources. All forms of business endeavours need the use of financial resources to succeed. The lifeblood of a business organisation is referred to in this manner as well. Regardless

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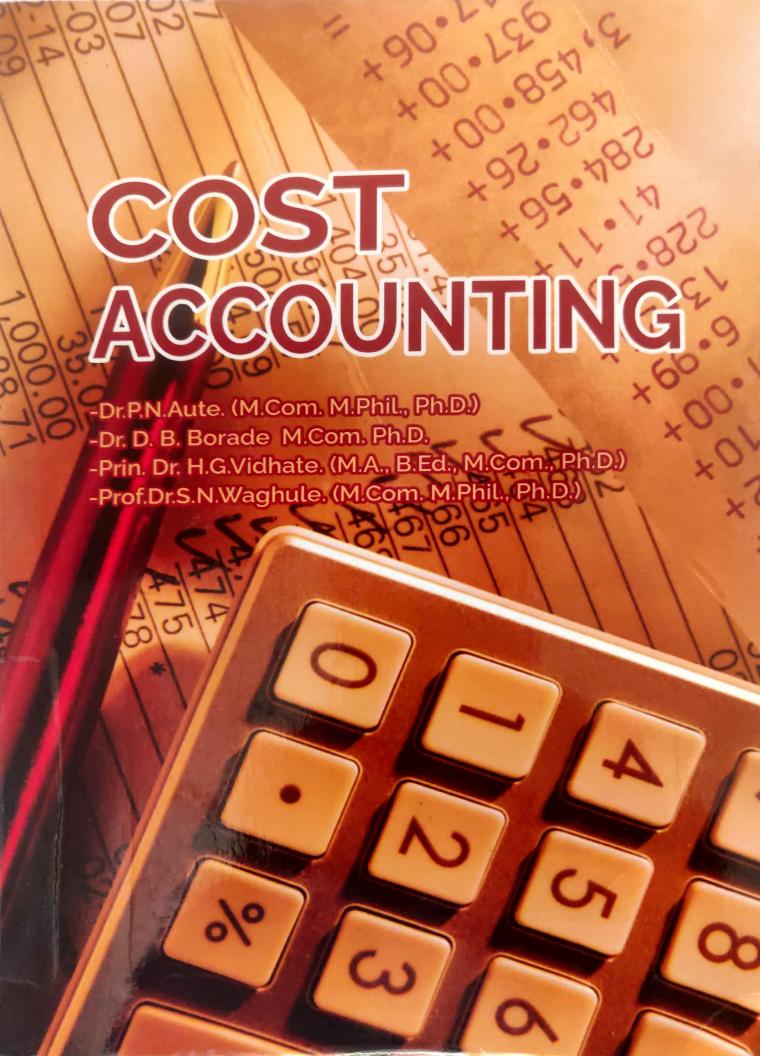
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# Unit I

## **COST ACCOUNTING**

Meaning, Definition, Limitation of Financial Accounting Objectives, Advantages, Disadvantages and Limitation of cost Accounting Difference between Financial & Cost

## 1. COST ACCOUNTING

Cost accounting is a method of managerial accounting which aims to capture the total production cost of a business by measuring the variable costs of each production phaseas well as fixed costs, such as a lease expense. Historians believe that cost accounting was first introduced during the industrial revolution when the new global supply and demand economies forced producers to begin monitoring their fixed and variable costs to automate their manufacturing processes.

Cost accounting allowed rail and steel companies to manage costs and make themselves more competitive. By the early 20th century, cost accounting had become a widely discussed subject in the literature of business management. A company's internal management department uses cost accounting to define both variable and fixed costs associated with the manufacturing process. It will first individually calculate and reportthese costs, then compare input costs with production results to assist in assessing financial performance and in making potential business decisions.

Cost accounting includes several forms of costs which are listed below.

ISBN: 978-93-94707-03-0



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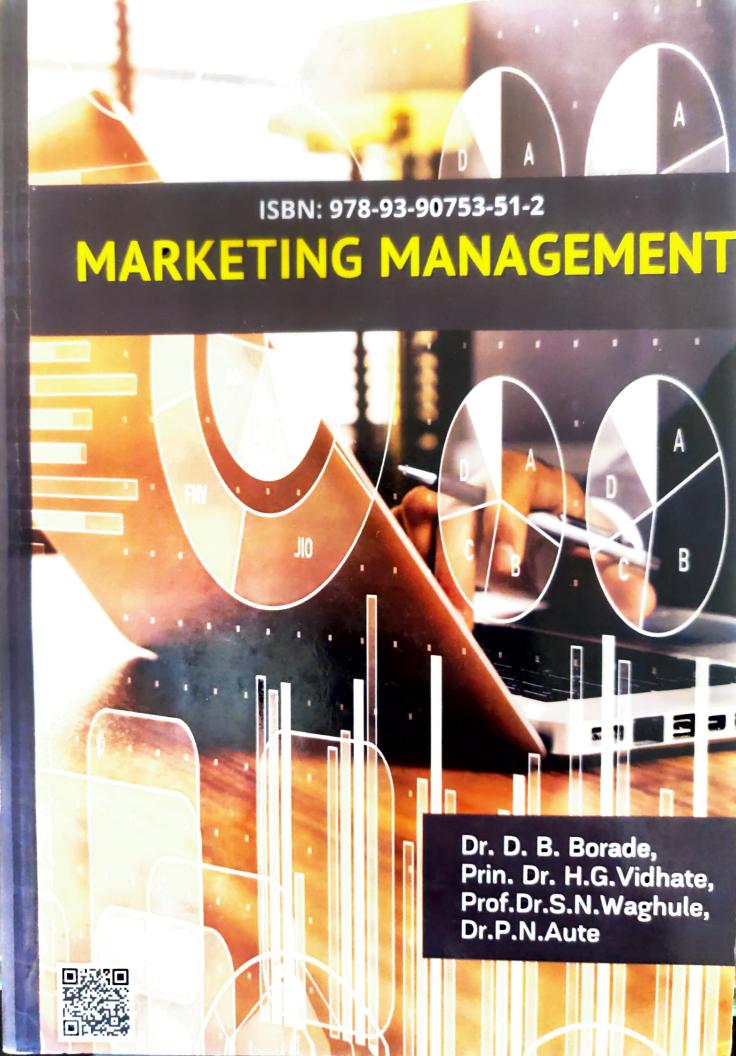
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ISBN: 978-93-90753-51-2

Published by Novateur Publication, Pune, M.S., India. First Printing, 2022.

# **Novateur Publication**

466, Sadashiv Peth, Pune, Maharashtra, India-411030 www.novateurpublication.com

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# CHAPTER I

# INTRODUCTION

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# Chapter 1

# FINANCIAL MANAGEMENT OBJECTIVES

# 1.1 OVERVIEW

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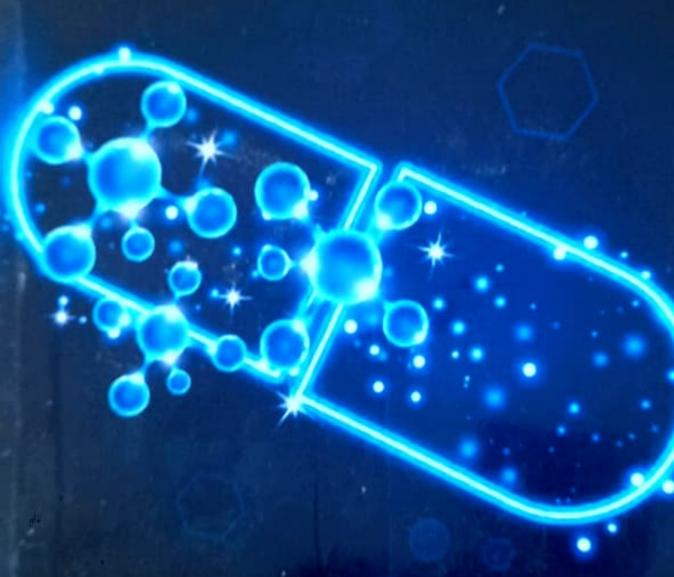
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-Dr. Ghumare Pramilla Pandurang

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#### CHAPTER 1

#### INTRODUCTION

Drug maltreatment in India is pretty much as old as somewhere else, if not more established, all along, weed drugs have been being used. Antiquated books are loaded with references to intoxicants, for example, 'soma rasa', 'dev goods', 'madira' and so on Opium became well known during the Mughal time frame. As of not long ago, cocaine had numerous lovers, particularly in 'red-light' regions. The post-war period saw the ascent of engineered drugs-the two energizers and depressants. Hard drugs like heroin and lysergic corrosive diethylamide (LSD) are being used. As of late found drugs like phencyclidine hydrochloride (Angel Dust) may likewise be known to specific clients in metropolitan regions. In any case, it is hard to state that the predominance pace of psychoactive drugs in the nation is practically identical to that found in numerous western nations. In any case, the issue has regularly been related with the cycles of urbanization and modernization. As an agricultural nation, India is particularly in the pains of these cycles and subsequently the drug scene in the nation should be observed cautiously in light of the fact that this issue is more pervasive among adolescent gathering.

#### What are drugs and why do we need new ones?

Drugs are completely characterized as synthetic substances that are utilized to forestall or fix sicknesses in people, creatures and plants. The action of a drug is its pharmaco logical impact regarding the matter, for instance, its pain relieving or b-blocker activity. Drugs act by slowing down biological cycles, so no drug is totally protected. Everything drugs can go about as toxins



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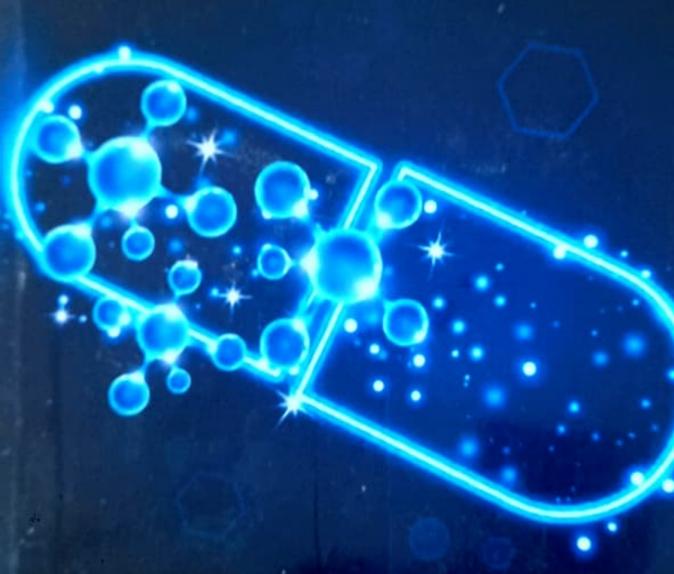
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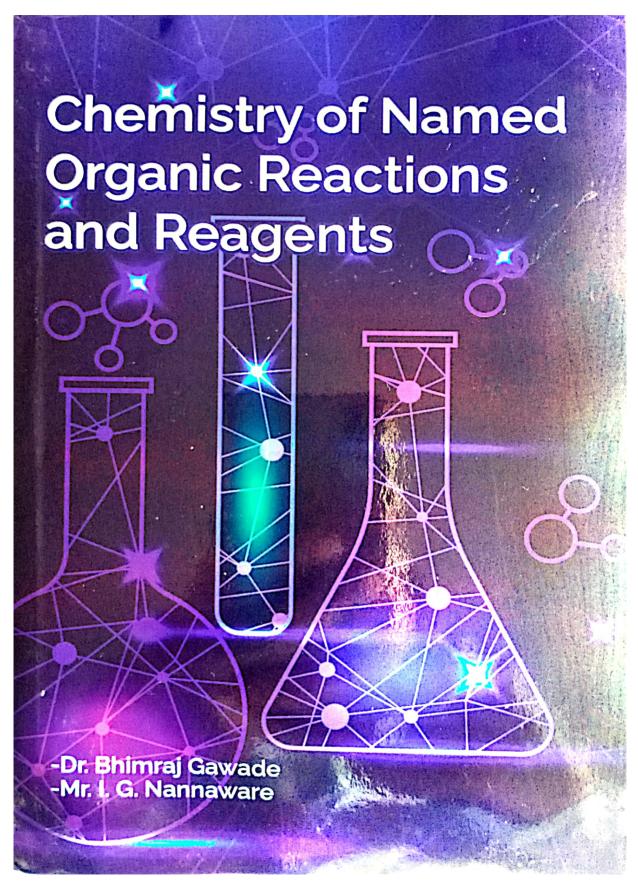
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# Chemistry of Named Organic Reactions and Reagents

Dr. Bhimraj Gawade & Mr. I. G. Nannaware

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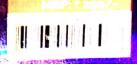
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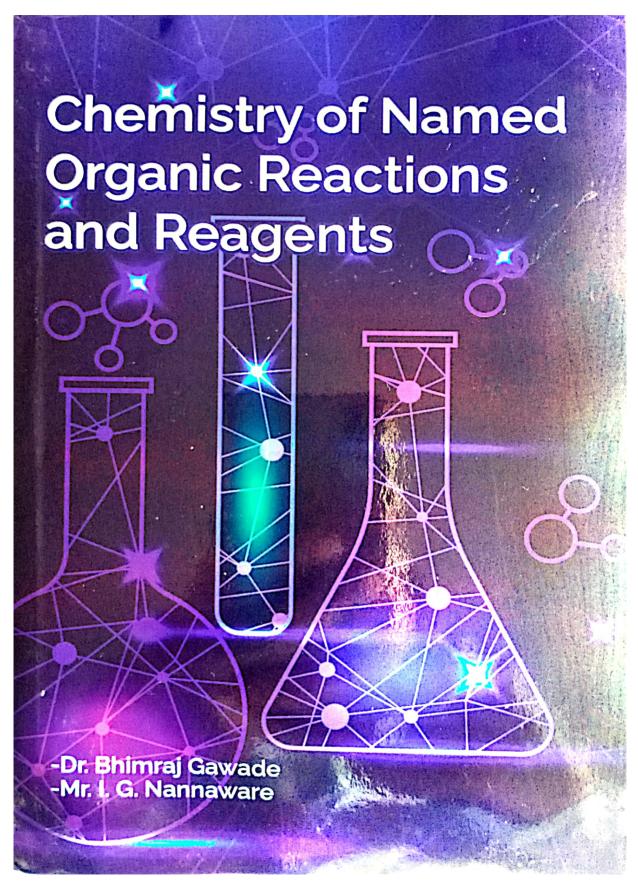
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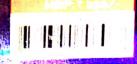
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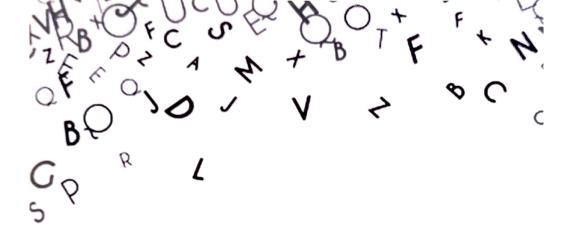
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# SIMPLIFIED ENGLISH GRAMMAR COMPOSITION



-Dr. Sajjan D. Gaikwad (M.A. SET & Ph. D)

-Dr. Shailaja B. Kuchekar (M.A, M.Phil, NET & Ph.D.)

# SIMPLIFIED ENGLISH GRAMMAR & COMPOSITION

Dr. Sajjan Gaikwad & Dr. Shailaja Kuchekar

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#### **PREFACE**

The Word Grammar means different things to different people. To the ordinary citizen, it connotes to correctness or incorrectness of the language that he or she speaks. To a school student, it means an analytical and terminological study of sentences. Knowledge of grammar helps the student in the correction of mistakes and improvement of written work. A person can't learn a foreign language accurately only through a process of unconscious assimilation. Grammar is a sure ground of reference when linguistic habits fail us. So grammar is indispensable for the student. In this paper my aim is to bring the attention of the language teacher as well as the learner about the real utility of grammar in teaching English language. Hence, let's discuss some basic things about English grammar and composition.

Grammar is the study of words and the ways words work together; an invisible force that guides us as we put words together into sentences. Any person who communicates using a particular language, consciously or unconsciously becomes aware of the grammar of that language. But in this context I would like cite a wonderful example as described "A writer has given a beautiful analogy to illustrate the use of knowledge of Grammar. Imagine two car drivers. The first driver knows only driving and nothing about the working of the engine. He feels helpless whenever there is some trouble with the machinery. The second driver knows driving and also understands the working of the machinery. The person who knows grammar is like this second driver. In case he doubtful about the correctness of a particular thing, his knowledge of grammar comes to his rescue". Therefore, to speak in a clearer and more effective manner we have to study grammar. For the person who has unconscious knowledge of grammar, it may be sufficient for simple language use. But the persons who wish to communicate in the artistic manner with welldefined structures must go for the greater depth of understanding and proficiency what the study of grammar offers.

The next activity that helps significantly is reading and listening to English-speaking sources that contain mostly understandable words and/or phrases. The more learners process these input and make efforts to understand, the better and the sooner their mind will approximate the system of the English language. In other words, the principle is simple: the more one listens to and reads English input that he or she can understand, the more quickly their mind operates like the English grammar system.

Another activity that supports and expedites grammar learning is noticing English grammatical patterns. If the first strategy above draws on simple understanding of the input, this strategy draws attention to the patterns and silently commits them to the language system in the mind. This also involves parsing the sentences and analyzing the elements of sentences in order to produce output with the same patterns. In addition to the two activities above, an old adage "practice makes perfect" still works effectively. Mastery of grammar calls for a lot of intensive practice. This is where grammar books play out their roles. If done regularly, the exercises in the books will enable a learner to gain increasing mastery of the patterns.

Last but not least, the learning of grammar benefits from error corrections. Learners will come to a stage where they need to produce utterances or sentences, and it is at this stage that they should heed the corrections given by their teachers or more able friends.

In short, processing a lot of comprehensible input, noticing patterns, and attending to feedback are some strategies for mastering English grammar and composition.

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Dr. Sajjan D. Gaikwad (M.A. SET & Ph. D) is Head & Assistant Professor in English at Anandrao Dhonde Alias Babaji Mahavidyalaya. Kada. His area of interest is Drama. Criticism and phonetics. Research papers published in National Parallel Research. published in National and International Journals.



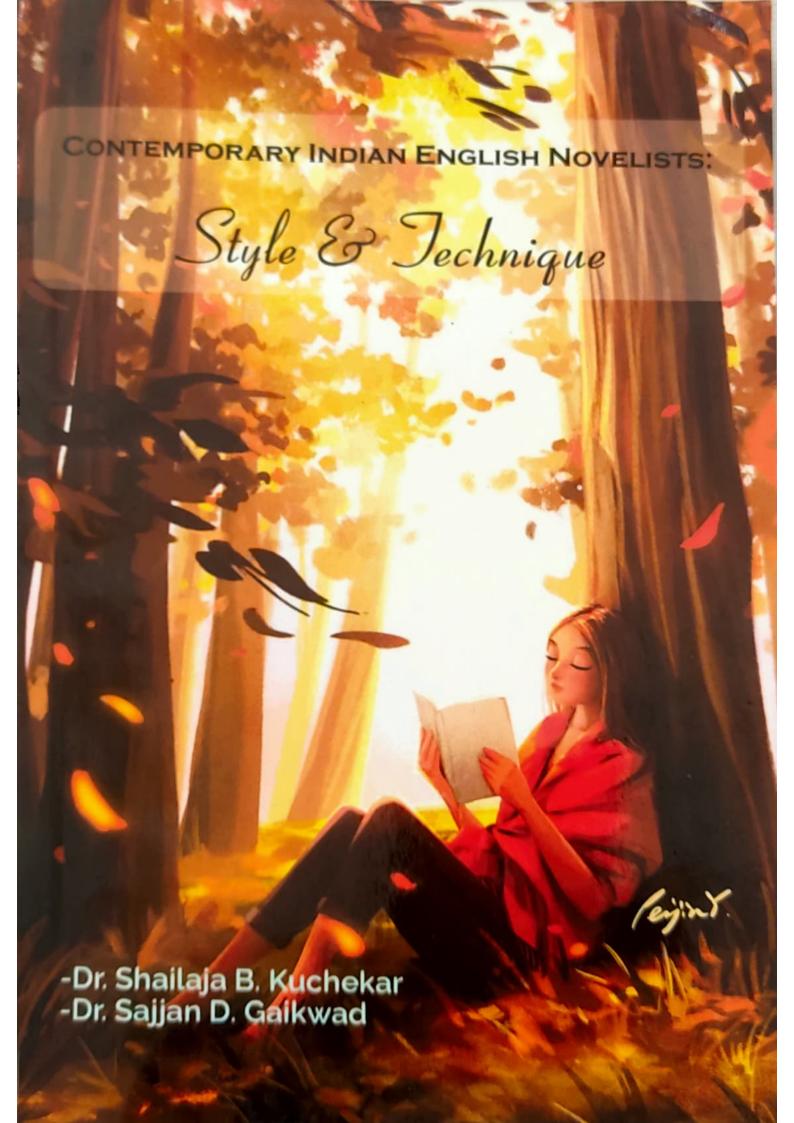
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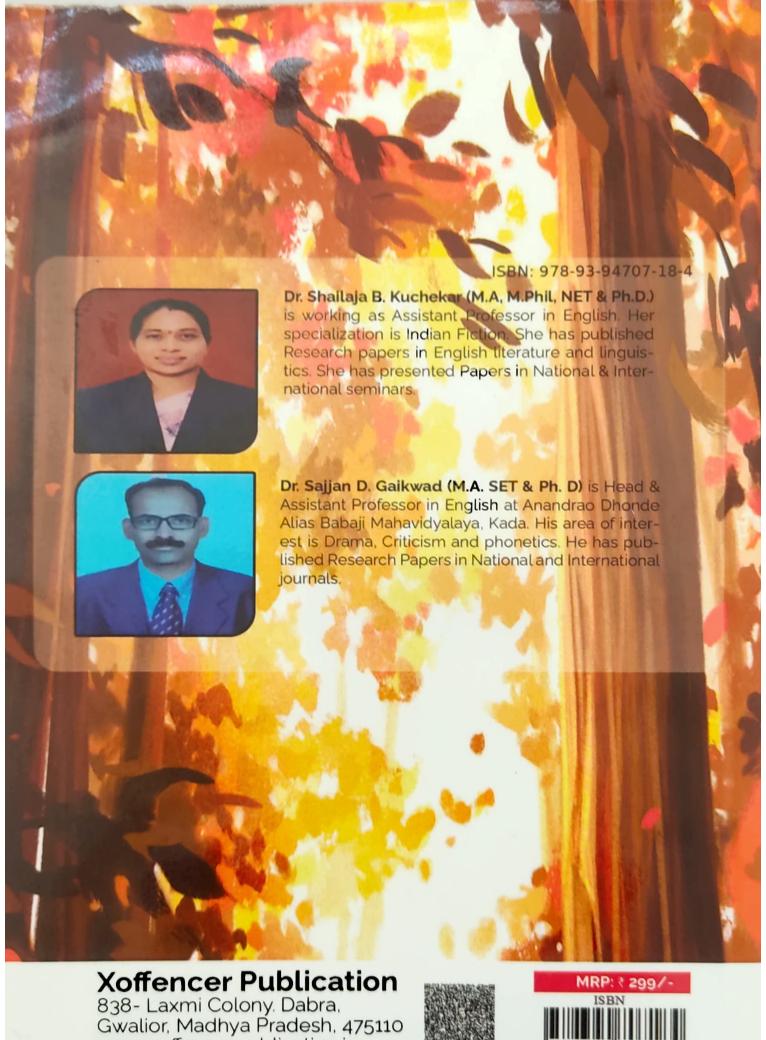
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#### PREFACE

This reference book aims to provide a comprehensive set of named reactions and reagents for organic che Mistry, which will be suitable for scholars of che Mistry. The reference book concentrates on core topics name reactions and reagents which are most likely to be common to those organic che Mistry courses which follow on from a foundation or introductory general che Mistry course. The knowledge of organic reactions and reagents are must for the study of fundamentals of organic che Mistry as reactions are the heart of organic che Mistry. Mechanism of reactions tells as how the molecules initiate reaction; permit us to find pathways of all reactants, which enable us to predict the nature of product expected. Many name reactions and reagents available in literature. We have selected some common reactions and reagents which are useful to understand the fundamentals of organic che Mistry for any university undergraduate and postgraduate students. Out of them, some reactions for the synthesis of compounds have been described which have great synthetic utility in the field of pharmaceuticals. In deciding the depth of topic, we relied upon my experiences as a classroom teacher and interaction with organic che Mistry scholars.

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  - भाळत सर्व विध्यर्थ्यांना समान वागणुक.
  - ६) शाळांचे infrastructure व सृविधा वाढविण्यावर भर देण्यात येईल त्याचवरोवर Group Facilities देण्यात येतील.
  - 7) Fair Recruitment ऑफ teachers, नो Guest teacher
  - ८) Medium ऑफ instruction Regional language असेल.
  - ९) Multi diciplinary education, Liberal education या अतिक्ष चांगल्या गांग्टी इथे दिल्या आहेत. थोडक्यात, सध्याचे शिक्षण धोरण है अति सुंदर आहे; परंतु व्यवहारात जेव्हा याचा वापर होईल तेव्हा यादे मत्य-अमत्य निदर्शनास येईल हे मात्र तेवढेच खरे आहे.

या नवीन धोरणावावत माझ्या मनात जी भीती आहे ती मी खालीलप्रमाणे मांडत आहे. जगात प्रथम कोणी शिक्षण सुरु केले सांगता येणार नाही, परंतु यूरोपमध्ये ग्रीस आणि रोमन साम्राज्यात स्त्री सत्ताक पद्धती होती. तेव्हाच आणि तिद्येच शिक्षणाची सुरुवात झालेली आपणास पहावयास मिळते. शिक्षणातृन सामाजिक सांस्कृतिक क्रांती होते. माणसाचे मानसिक वौद्धिक आणि भौतिक दारिद्रय दूर करणारे ते खरे शिक्षण. शिक्षणाच्या संधीमुळे माणसाला ज्ञान,सत्ता आणि संपत्ती ही तीन बलस्थाने प्राप्त होतात. ही बलस्थाने सर्वसामान्यांना मिळू नये म्हणून पूर्वी काहीजण प्रयत्न करत होते. दुबळयातून आपणास स्पर्धक तयार होऊ नयेत अशी व्यवस्था प्रस्थापित करत असतात. शिक्षणामुळे माणूस शहाणा होतो, बदल स्वीकारतो, दुबळ्यांना शिक्षण मिळाले की ते अधिकार व हक्कांवर समानता सांगतील याची प्रस्थापितांना कायम भीती असते. प्रस्थापित दुबळ्या समाजाला शिक्षण देतात ते आपल्या सोयीसाठी. आगामी शिक्षण धोरण कुशल मजूर तयार करण्यावर भर देणारे तर नाही ना अशी मला भीती वाटते आहे.

अस्पष्टता, अंतर्गत विरोधाभासी स्थिती कल्पनांची वैचारिक अस्पष्टता आणि नक्कल हे आजच्या नवीन शैक्षणिक धोरणास चिन्हांकित करतात. हे शैक्षणिक धोरण मूलभूत कर्तव्याचा संदर्भ देते, परंतु मूलभूत अधिकारावर मात्र मौन बाळगते आहे. अनौपचारिक व औपचारिक शिक्षणातील फरक सुद्धा या नवीन शैक्षणिक धोरणात धुसर झालंला दिसतो. अलीकडच्या काळांत शैक्षणिक विषमता अधिकच गडद झालेली आपणास पहावयास मिळते. पहिल्यापासूनच भारतीय शिक्षणावर सामाजिक, कौटुंबिक आणि आर्थिक समस्यांचा परिणाम होत असल्याचे दिसते. भारतीय शिक्षणात ग्रामीण-शहरी, महिला-पुरुष आणि प्रादेशिक विषमता ठसठशीत दिसून येते. अगदी अलीकडच्या अहवालानुसार देशातील ७० % जनता गावात राहते, परंतु ६० % ग्रामीण महिला व ४२ % पुरुषांना लिहिता वाचता येत नाही. ही विषमता दिवसेंदिवस वाढताना दिसते आहे. या नवीन शैक्षणिक धोरणात १०० विदेशी विद्यापीठांना पायघड्या घालण्यात आल्या आहेत. या संस्थांना केवळ संस्था काढण्यास परवानगी दिली असे नाही, तर त्यांच्या हितसंबंधांनुसार बदल करण्याची खुली परवानगी दिली जाईल. या संस्था स्वायत्त असतील यावरुन हे शिक्षण सर्वसामान्यांच्या आवाक्याबाहेरच असेल यात

काही तिळमात्र शंका नाही. तसेच परावलंबी विद्यापीठांच्या शिक्षण संस्थांक आधारावर आत्मनिर्भर भारत कसा बनेल बरे?

आधारावर आत्मान के नवीन धोरण बनवताना देशातील दारिवय, साक्षरता, साधनसामुग्री यांच नवीन धोरण बनवताना देशातील दारिवय, साक्षरता, साधनसामुग्री यांच विसर पडलेला दिसतो. प्रगतीपुस्तकाला स्मार्ट प्रगतीपुस्तक म्हटल्याने जास्तीच काही फरक पडेल असे वाटत नाही. बाजारु शिक्षण संस्थांमध्ये गुणवत्ता है मालकाच्या घरी पाणी भरते त्यामुळे मालक जे ठरवतील तेच शिक्षकांच मालकाच्या घरी पाणी भरते त्यामुळे मालक जे ठरवतील तेच शिक्षकांच शिक्षकांच कागते. या नवीन धोरणात नैतिक मूल्यांचे शिक्षण असा उल्लेख आहे परंतु या नैतिक मूल्यांची दिशा कोणती आहे ते समजत नाही. 'सभी बच्चो व परंतु या नैतिक मूल्यांची दिशा कोणती आहे ते समजत नाही. 'सभी बच्चो व भारतीय मूल्य जैसा- सेवा, अहिंसा, स्वच्छता, सत्य, निष्काम कर्म, सहनशीलता, भारतीय मूल्य जैसा- सेवा, अहिंसा, स्वच्छता, सत्य, निष्काम कर्म, सहनशीलता, इमानदारी, कडी मेहनत, महिलाओं के प्रति आदर, बुजुर्गों के प्रति आदरभाव, इमानदारी, कडी मेहनत, महिलाओं के प्रति आदर, बुजुर्गों के प्रति आदरभाव, विकसित किया जायेगा'. असे शब्द या धोरणात पहावयास मिळतात.

आगामी काळात भारतीय स्त्री चिकित्सक दृष्टी व वैज्ञानिक दृष्टीकोष गमावून बसते की काय अशी भीती वाटते आहे. अर्थात तिला गुलामगिरीच्य बेड्या टाकल्या जातील. ज्या देशातील स्त्री गुलाम त्या देशाचा समाज गुलाम, समाज गुलाम झाला की तो देश गुलाम बनतो हा इतिहास आहे. मनुस्मृतींने स्त्री, शूद्र, अतिशूद्र यांना शिक्षण नाकारुन गुलामीला आमंत्रण दिले होते, हे विसरुन चालणार नाही. नवीन शैक्षणिक धोरण हे खाजगीकरण, बाजारीकरण जातकंद्री आणि धर्मकंद्री वाटते. बहुजन समाजाकडे हे धोरण केवळ 'कुशल मजूर' म्हणून पाहते आहे असा समज धोरण वाचताना होतो. त्यापलीकडे डॉक्टर, वकील इंजिनिअर, प्राध्यापक आणि संशोधक इत्यादी होण्यासाठी मोठी किंमत मोजावी लागेल. प्रशिक्षण घ्यावे लागेल हे तेवढेच खरे.

वहुजन समाजाला शिक्षणापासून वंचित ठेवून चालणार नाही हा विचार देशाला गुलामगिरीच्या खाईत लोटणारा आहे. शिक्षण नाकारुन सर्वसमावेशक सर्वाना समान संधी देणारे सक्तीचे आणि मोफत शिक्षण देण्यासाठी शिक्षणाचे राष्ट्रीयकरण हाच एकमेव उपाय आहे. देशाची गरज वजा करून राष्ट्रीय शिक्षण होरण राबविले जाणार असेल तर देशाला आम्ही मध्ययुगीन अंधारात घेऊन जात आहोत. या नीतीमुळे शिक्षणाचे प्रचंड बाजारीकरण होऊन पैसे उभे करणारे कोसंम महाविद्यालय व विद्यापीठ सुरू करतील: व्यवसायभिमुख च्या नावाखाली ही नवीन शिक्षण पन्दती भांडवली अर्थव्यवस्थेला सेवा देणारा 'मजूर' निर्माण करणार नाही कशावरुन. शिक्षणाचा संबंध मृलभूत अधिकाररशी जोडला जायला हवा होता तो जोडलेला दिसत नाही. मग कोणत्या परंपरा आणि मृल्ये आफल्याला पुढे न्यायचे आहेत हे ही स्पष्ट जाणवत नाही. जग चौथ्या औद्योगिक क्रांतीच्या उंबररूयावर उभे आहे आणि आपला Gross enrolment rate सध्या २५ % आहे तो आपणास ५०% २०३५ पर्यंत करायचा आहे. लोकशाहीत शिक्षणाचे विकेदीकरण महत्त्वाचे असते त्यामुळे समाजातील विविध घटकांपर्यंत व क्षेत्रापर्यंत शिक्षण पोहोचत असते. २०४० पर्यंत उच्च शिक्षण संस्थांची संख्या खूप कमी होईल, परंतु कॉलेजमध्ये विद्यार्थी संख्या वाढेल हे या धोरणातून स्पष्ट हिम्तं आहे.

शिक्षणाचे माध्यम मातृभाषा असले पाहिजे असे ठणकावृत सांगितले होते. मागच्या इतिहासात आपण पाहिले आहे शिक्षणाच्या वाजारीकरणाला व खासगीकरणाला प्रोत्साहन देण्यासाठी इंग्रजी माध्यमाच्या शाळांना महत्त्व जाणीवपूर्वक दिले गंलं. त्यामुळे मातृभाषेला थोरवी देऊन शिक्षणक्षेत्र इंग्रजीमय केले व शेवटी ते हिनत्वला गंले. आजतरी या इंग्रजी माध्यमांच्या शाळांना कोणी लगाम घालेल असे वाटत नाही. मातृभाषेचा मुहाही भारतासारख्या जाती समाजात क्लिप्ट आहं त्रिभाषा सृत्राचा उल्लेख या नवीन घोरणात ठेवलेला दिसतो. भाषा म्हणजे केवळ शब्द आणि व्याकरण नव्हे किंवा भावना व विचारांचे आदान-प्रदानाचे साधन नव्हे तर ती एक जिवंत दृष्टी असते; ती एक संस्कृती आणि सुखदुःखाचे प्रकटीकरण आहे. या घोरणात प्राचीन शिक्षण पद्धती व बहुविद्याशाखीय (Liberal Education) आणि (Multi diciplinary education) एकमेकांशी जोडण्याचा प्रयत्न केला आहे. हे केवळ अशक्य आहे, देशातील उपलब्ध सर्व साधने व श्रुटी लक्षात घेतल्याशिवाय हे करता येणार

नाही. या धोरणात २०३० पर्यंत प्रत्येक जिल्ह्यांत एक मॉडेल बहुविद्याशाखीय उच्च शिक्षण संस्था असेल असे नमूद केले आहे. मग अगोदरच्या मॉडेल शिक्षण संस्थांचे काय? शिक्षण संस्था म्हणून टिकून राहयचे असेल तर प्रत्येक शिक्षण संस्थां काय संस्थांचे काव शिक्षण संस्था महणून टिकून राहयचे असेल तर प्रत्येक शिक्षण संस्थेला खालीलपैकी काहीतरी दर्जा प्राप्त करावा लागेल .

9 .संशोधन करणे २ .संशोधन व शिकविणे ३ .शिकविणे आणि डिग्री देणा उच्च शिक्षण संस्था या तीनपैकी एका स्तरात आपला दर्जा प्रत्येक महाविद्यालयास निश्चित करावा लागेल. नाहीतर महाविद्यालय बंद होतील. योगा गणित, सांख्यिकीय आणि संगीत इत्यादी विषयांचे शिक्षण अनिवार्थ असेल भारतातील नालंदा तक्षशिला, वल्लभी विक्रमशिला ही आदर्श विद्यापी त्यांची निर्मिती कशी झाली त्याचा उहापोह न करता या विद्यापीठांचा सरळ संबंध बहुविद्याशाखीय शिक्षणाशी जोडला आहे. माझ्या मते (व्वध्वत्व्रध्ह क्द्रव्यद्धः हुद् कत्त्व) या सुबक नावाखाली विद्यार्थ्यांची हद्दपारी कायदेशीर केली जाणार आहे त्यामुळे कागदावर गळती कमी होऊन ५० % पर्यंत Gross Enrolment ratio पूर्ण होणार आहे. एक-दोन वर्षाचे कोर्सेस केलेले विद्यार्थी अर्धकुशल राहून वडिलांच्या व्यवसायात ढकलले जाण्याची दाट शक्यता आहे. स्वायत्त महाविद्यालयातून 'बाजार केंद्रीय' अभ्यासक्रम सुरू करण्याचे स्वातंत्र्य महाविद्यालयांना मिळणार आहे. लोकल टीचर्स, लोकल experts, लोकल volunteers इत्यादींची भरती कंत्राटी पद्धतीने केली जाण्याची दाट शक्यता आहे. यासाठी एक अमेरिकन शब्द tenure हा वापरण्यात आला आहे. यूजीसी चे अस्तित्व नष्ट होऊन त्या ठिकाणी हायर एज्युकेशन कौन्सिल ऑफ इंडिया येईल. यामध्ये १२ सदस्य असतील. त्यातील फक्त दोन सदस्य academician असतील असा उल्लेख आहे. विद्यापीठामध्ये बोर्ड ऑफ गव्हर्नेस असेल, त्यांची नियक्ती सरकार करेल. यामध्ये विद्यार्थी, प्राध्यापक, रोटेशन नुसार येणारे इत्यादींचा समावेश आढळत नाही. लोकशाही प्रक्रियेला आव्हान निर्माण होणार आहे. नवीन धोरणानुसार Vice Chancellor जाऊन त्या ठिकाणी चीफ एक्झिक्युटिव्ह येणार असेल तर ते लोकशाहीला मारक ठरेल. शिक्षणाच्या

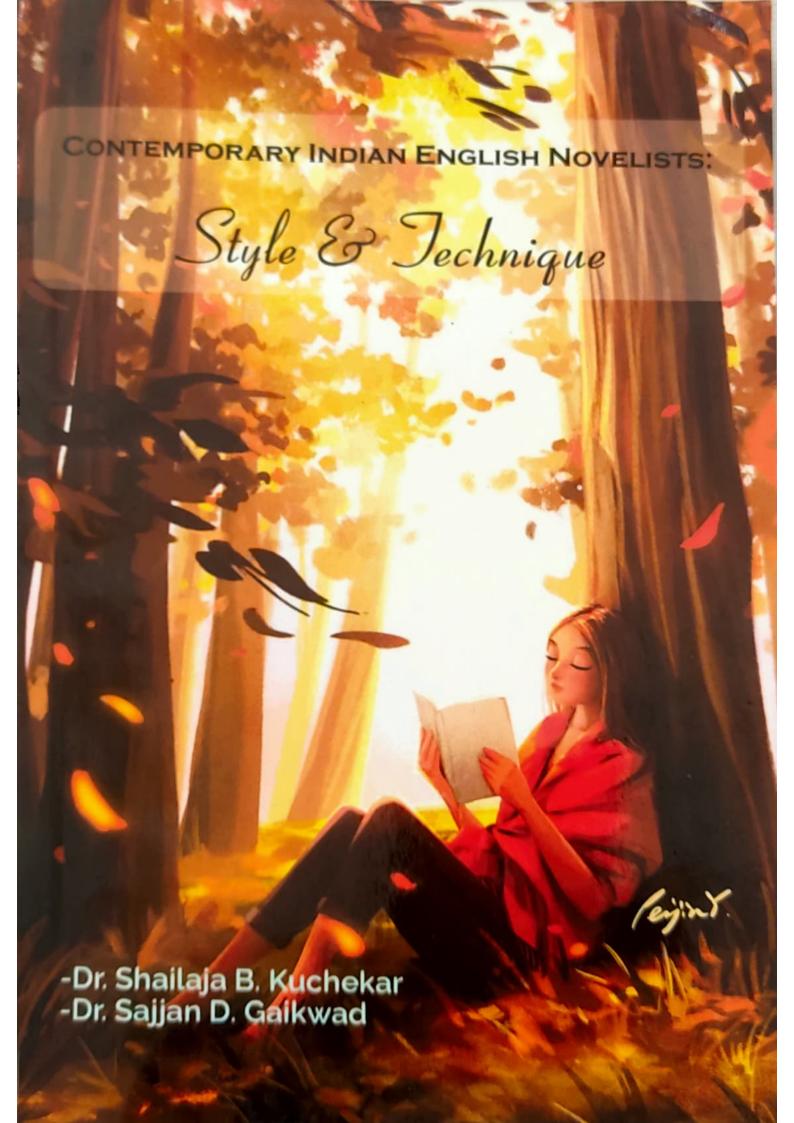
खाजगीकरणामुळे व बाजारीकरणामुळे भांडवली कंपनीना कमी मोबदल्यात श्रम विक्रणारा व सेवा देणारा मजूर लाभणार आहे.

अशामकारे नवीन शिक्षणविषयक घोरणात अनेक गोप्टी चांगल्या आहेत त्याचबरोबर वाईटही दिसत आहेत. विशाल महासागरासारखे जरी घोरण असले तरी ते पाण्यावर लिहिण्यासारखे कुचकामाचेही आहे. याचे सारे यश-अपयश हे अंमलवजावनीवर अवलंबून राहील.

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#### Xoffencer Publication

Behind shyam vihar vatika, laxmi colony

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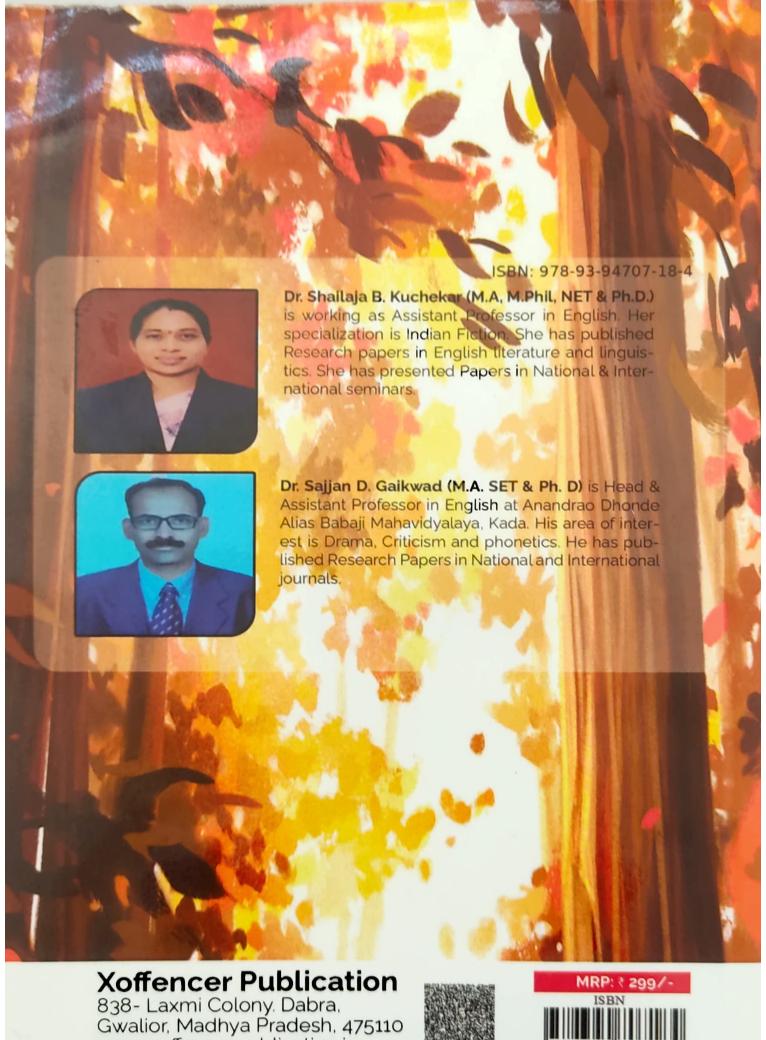
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### PREFACE

This reference book aims to provide a comprehensive set of named reactions and reagents for organic che Mistry, which will be suitable for scholars of che Mistry. The reference book concentrates on core topics name reactions and reagents which are most likely to be common to those organic che Mistry courses which follow on from a foundation or introductory general che Mistry course. The knowledge of organic reactions and reagents are must for the study of fundamentals of organic che Mistry as reactions are the heart of organic che Mistry. Mechanism of reactions tells as how the molecules initiate reaction; permit us to find pathways of all reactants, which enable us to predict the nature of product expected. Many name reactions and reagents available in literature. We have selected some common reactions and reagents which are useful to understand the fundamentals of organic che Mistry for any university undergraduate and postgraduate students. Out of them, some reactions for the synthesis of compounds have been described which have great synthetic utility in the field of pharmaceuticals. In deciding the depth of topic, we relied upon my experiences as a classroom teacher and interaction with organic che Mistry scholars.

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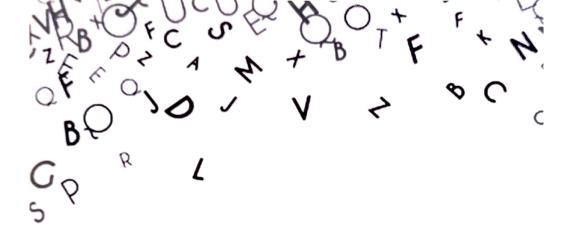
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-Dr. Shailaja B. Kuchekar (M.A, M.Phil, NET & Ph.D.)

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MRP: ₹250/-





Published by:

**Xoffencer Publication** 

Behind shyam vihar vatika, laxmi colony

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### **PREFACE**

The Word Grammar means different things to different people. To the ordinary citizen, it connotes to correctness or incorrectness of the language that he or she speaks. To a school student, it means an analytical and terminological study of sentences. Knowledge of grammar helps the student in the correction of mistakes and improvement of written work. A person can't learn a foreign language accurately only through a process of unconscious assimilation. Grammar is a sure ground of reference when linguistic habits fail us. So grammar is indispensable for the student. In this paper my aim is to bring the attention of the language teacher as well as the learner about the real utility of grammar in teaching English language. Hence, let's discuss some basic things about English grammar and composition.

Grammar is the study of words and the ways words work together; an invisible force that guides us as we put words together into sentences. Any person who communicates using a particular language, consciously or unconsciously becomes aware of the grammar of that language. But in this context I would like cite a wonderful example as described "A writer has given a beautiful analogy to illustrate the use of knowledge of Grammar. Imagine two car drivers. The first driver knows only driving and nothing about the working of the engine. He feels helpless whenever there is some trouble with the machinery. The second driver knows driving and also understands the working of the machinery. The person who knows grammar is like this second driver. In case he doubtful about the correctness of a particular thing, his knowledge of grammar comes to his rescue". Therefore, to speak in a clearer and more effective manner we have to study grammar. For the person who has unconscious knowledge of grammar, it may be sufficient for simple language use. But the persons who wish to communicate in the artistic manner with welldefined structures must go for the greater depth of understanding and proficiency what the study of grammar offers.

The next activity that helps significantly is reading and listening to English-speaking sources that contain mostly understandable words and/or phrases. The more learners process these input and make efforts to understand, the better and the sooner their mind will approximate the system of the English language. In other words, the principle is simple: the more one listens to and reads English input that he or she can understand, the more quickly their mind operates like the English grammar system.

Another activity that supports and expedites grammar learning is noticing English grammatical patterns. If the first strategy above draws on simple understanding of the input, this strategy draws attention to the patterns and silently commits them to the language system in the mind. This also involves parsing the sentences and analyzing the elements of sentences in order to produce output with the same patterns. In addition to the two activities above, an old adage "practice makes perfect" still works effectively. Mastery of grammar calls for a lot of intensive practice. This is where grammar books play out their roles. If done regularly, the exercises in the books will enable a learner to gain increasing mastery of the patterns.

Last but not least, the learning of grammar benefits from error corrections. Learners will come to a stage where they need to produce utterances or sentences, and it is at this stage that they should heed the corrections given by their teachers or more able friends.

In short, processing a lot of comprehensible input, noticing patterns, and attending to feedback are some strategies for mastering English grammar and composition.

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Xoffencer Publication 838- Laxmi Colony Dabra, Gwalior, Madhya Pradesh, 475110 www.xoffencerpublication.in





### ANNA BHAU SATHE

A Voice of Marginalized Society



Editor

Dr. Ramesh Landage • Dr. Vishnu Patil

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Published by:

Akshita Publishers and Distributors

H.No. J-180/5-A, 4th Pusta,

Pahari Hotel Wali Gali

Opposite Ajay Medical Store,

Kartar Nagar, Delhi-110053

E-mail: abooks2019@gmail.com

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Anna Bhau Sathe: A Voice of Marginalized Society

© Editor

First Edition 2020

ISBN: 978-81-940592-5-7

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### PRINTED IN INDIA

Published by Akshita Publishers and Distributors, Delhi-110053. Laser Type Setting at Shahabuddin Computers, Printed at Milan Enterprises, Delhi-110002.

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### Chapter-4

### Anna Bhau Sathe: Maker of Indian Literature

-Ms. Shailaja B. Kuchekar

#### Abstract

Indian literature is read all over the world. Various regional languages and regional writers have contributed to Indian literature. These writers presented their regional and social problems. Among them, Anna Bhau Sathe is on of the Indian writer who has created his own place in the world of literature. The contribution he has made to Indian society as a social reformer is greater than the contribution as a writer. He has used his skill of writing to awaken the weaker part of Indian society. He tried to lessen the lower class exploitation and sufferings through his literature. He used popular forms of literature like Powada and Lawani to make the society aware of the reality about the lower caste. He became popular as a writer and poet as well as a reformer. His way of writing for the sake of enlightenment made him different from other writers. This gave way to shape the Indian literature. He created a group of followers who read and created the similar type of literature. He was inspired by Dr. Babsaheb

Ambedkar's writing. But Dr. Babasaheb Ambedkar himself was inspired by Anna Bahu Sathe's literary works and with his struggle as a reformer. The coming generations inspired by Sathe's works as he gave a new direction to the Indian literature and created a different place in the world literature.

Key Words: Dalit, Literature and Indian Literature

### Intoduction

India is the land of culture. Its culture is followed and appreaciated all over the world. 'Indian Culture' has been the area of intrest of the research scholars and students. Not only culture but the Indian literature is also the thing that has been the topic for discussion. Literature in India has started around late 19th century. There are many Indian writers who have contributed great pieces of literature to the world of literature. But Bankimchandra Chatterjee's Rajmohan's Wife is said to be the first Indian English novel. It is evident that history of Indian literature does owe a lot to Bengali literature. As K. R. Srinivasa Iyengar states in his book Indian Writing in English, "It was in Bengal that the literary renaissance first manifested itself; but almost immediately afterwards, the signs of 'new life' were to be seen in Madras, Bombay and other parts of India as well." Bengali writer started writing in English; others translated their Bengali works into English. Thus, the literary renaissance was begun in Bengal. But the writers throughout India were trying their hands in English. Their new ideas in writing were coming out with the literary works they created. In those days the writers from Madras, Bombay and some other parts of India were creating new and innovative literary pieces in English.

### Anna Bhau Sathe: Maker of Indian Literature

Indian writers not only wrote in English but also in their mother tongue. Literature in various regional languages was created by the Indian writers. Anna Bhau Sathe is also among them. He was a social reformer, poet and novelist. He has

written novels, poems and other literary geners in Marathi-He depicted rural Indian society and the lower caste people with their problems. Being a lower caste, rustic and a downtrodden he could experience and feel the situations and present it with truth and reality. Unfortunately, he couldn't take education. He could attend only a one and half day school Indian caste system, the mentality of not allowing lower caste people to learn and live a good life and economically low condition of his family forced him to do odd jobs. He could somehow manage to have bread for his family by working as a labour. But he had a strong feeling for education. So he learned to write and started writing novels and poems to uplift the caste and the society in which he lives. His works are the best pictures of the lower social class. He himself had witnessed the men and women bullied by the upper class people. The rustic men and women depicted in his works were brave; they were ready to fight for the undertrodden. The characters in his novels are appreciated and adored by the readers. Specially, bravery and the ability to fight for the downtrodden are shown in his works.

Anna Bhau Sathe wrote in the age when upper middle class writers like Phadake and V.S. Khandekar were writing entertaining pieces of literature. There was no place for Dalit literature. But Anna Bhau Sathe began to write on the workers, exploited lower class people, rustic and economically poor people. This kind of writing gave birth to the Dalit movement. Being a worker, he has experienced a great deal of suffering. So his works were the real picture of the pathetic condition of lower class people. Dr. B. R. Ambedkar's participation in social movements and his works have been great impact on Anna Bhau Sathe's writings and his social activities. Dr. B. R. Ambedkar also believed that Anna Bhau Sathe's one ballad is more powerful than Ambedkar's one speech. Thus, his literature was getting shaped and it was giving shape to the literature created in India

Like Dr. B.R. Ambedkar, Anna Bhau Sathe also has the impact of Jyotirao Phule's writings and his social work. He was using his skill of writing for the development of weaker class of the society. For that he presented the exploitation of lower social class by the upper class. This proved helpful for the enlightenment and the awakening of the exploited people. His characters and themes revolve around the reality in the society. He belonged to a lower caste. This untouchable caste was not allowed to get along freely in society. They have no right to get education and participate in the religious programmes. So the people belonging to this caste have to do the lower type of jobs like cleaning, sweeping, etc. Many times they have no works so no food to eat. In such situations they have to steal something for the urge of stomach. Sathe has presented the characters belonging to this lower caste that they are not merciless but full of self-respect. His characters are rebellious against the unnecessary social customs. They actually fight for the protection of human rights. Through his literature, Anna Bhau Sathe shows the hard-working labor class. The literature also shows the strong feeling that the hard-working and suppressed should be respected. His characters are full of self-respect and bravery. Presentation of the lower class, their exploitation by the upper class and the bravery and the self respect of the lower class men and women in Sathe's literature helped to get the new dimension to the Indian literature. Ballads and poems, being a popular literary form also contributed to give shape to the Indian literature.

His writings depict rural India, true picture of lower class society, changing image of rustic women, communal conflict, social class conflict, etc. He chooses his themes and characters as to represent the true picture of Indian society. This gave birth to social reforms. Sathe became icon to *Dalits*. He chose the folkloric narrative styles like *Powada* and *Lawani*. This kind of narrative poems easily made him popular. He became popular not for his literature but also for his way of social reform. The community was awakening. There was impact of foreign literature on Indian literature, specially, on Marathi literature. But Sathe inserted new ways and styles in writings which helped the Indian literature to take a new shape and

new style. New generations inspired and imitated his styles. Gangadhar Pantawane, Namdev Dhasal carried on this heritage of Dalit literature. They wrote books like Dalitanche Prabodhan and Aambedkari Chalval Aani Socialist, Communist respectively. Sathe's impact can be seen easily in the writings of these writers. The heritage is now followed by many new writers who are the followers of Sathe's literature. Laxman Mane's Upara, Narendra Jadhav's Ambedkar: Awakening India's Social Conscience, Laxman Gaikwad's Uchalya are the books which are related to lower class conflict and social awakening. Thus, Anna Bhau Sathe's writings have proved to be a turning point in Indian literature. It gave new shape and style to the Indian literature. Not only to the period which Sathe belongs to but also to the coming generations Sathe's writings is the inspiration in the area of literature.

#### Conclusion

Being an icon to *Dalits* Anna Bhau Sathe has contributed great literary pieces to the Indian literature. His writings have proved inspiration to the generations. Not only in India but his literature has been read all over the world. The translation of his works in different languages is in itself a great honour to Anna Bhau Sathe and his contribution. He was not the icon of *Dalits* for his writings only. He was a social reformer. He presented the pathetic and real situation of undertrodden. He used his writings as a tool in his social fight. He was unaware of the fact that his literary works are going to be the turning point in shaping the Indian literature. His literature stands as a literature of entertainment as well as the literature of reform.

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### नवीन शेक्षणिक धोरण



डॉ.आरगडे अंबादास

- नवीन शैक्षणिक धोरण (New Educational Policy)
- डॉ.आरगडे अंबादास
- I.S.B.N. No.: ९७८-९३-९२८६५-४९-७

### प्रकाशक :

एज्युकेशनल पब्लिशर्स ॲण्ड डिस्ट्रिब्युटर्स

गोकुळवाडी, औरंगपुरा, औरंगाबाद.

दुरध्वनी क्र.: ०२४-२३२९२०४

भ्रमणध्वनी : ०९९७००६७९७१

ई-मेल : educationalpub@gmail.com

Web: www.educationaldp.com

- प्रथम आवृत्ती : मे २०२२
- मुद्रणस्थळ : राजमुद्रा ऑफसेट, औरंगाबाद.
- सृचनाः सदरील संपादित ग्रंथातील लेखकांच्या मताशी संपादक सहमत असेलच असे नाही.
- किंमतः २५०/-

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### Role of Language in New Education Policy

Dr. Kuchekar Shailaja Baburao

have included some necessary methods and removed some education palicy to become 'global knowledge superpower'. They commerce alive. The government of India has designed the new amplemented has some points which help to keep the tradition and generation. New Education Policy formed in 2020 but yet to be nexessary to hand over the ancient and rare things to the next coming generations. Young generation is the future of nation. It is house adored and should be taken care of as to keep it safe for the and enstorns. Its heritage has become the attraction for the world. It is India has been appreciated for its ancient culture, tradition

from preschool to secondary school. The children learned through language. It is actually a process of universalisation of education three regional languages. There is no force of a perticular or foreign language as a medium of instruction. Children are free to take two or their native language. The New policy does not insist a perticular process. Children understand in a proper manner if they are taught in learning process. Medium of instruction plays a vital role in the The way in which the instructions are given affects the teachingpersonality development is expected through New Education Policy. language are focused on in the new policy. Children's overall educational system is remodeled. Particularly, ancient tradition and With the reformation of New Education Policy inddia's overall unnecessary points in thepolicy design.

language. The native language or mother tongue will make them interaction will be improved. Interaction happens with the help of using proper language. Their mental health as well as social new education policy. They will be given quality education through Innovative ideas in the learner's minds are given shape with this this new system will be ready to face the world, not only India.

they understand it. So the burden of translation is reduced as the other language they try to translate it in their mother tongue and then Children understand in their native language. If they listen or read in mother tongue they will have to understand the language first intellectual as well as mental health. If they are not taught in their language is very much important in preparing the learner's high quality education with the focus on language. The knowledge of The new policy becomes platform for vocational training and

comfortable and they will understand the concepts properly. The

policy aims at children's allover growth with mental stability.

focus is given to the Mother tongue or regional language.

The language plays vital role in the understanding of the teachers. Such teachers will be created for the new education system. best out of the learners it requires highly qualified and well-equiped emphasis is on experimental learning and social interaction. To get burden of examination are also the features of this new policy. More health, social interaction and no compulsion about language and no understand the other concepts. Focus is on understanding, mental enough knowledge about the language it will become easier to the acquisition of language occurres in this stage. If learner's have speaking, reading, writing language. This stage is very important as secondary stage. Among these stages preparatory stage deals with like foundational stage, preparatory stage, middle stage and Different stages are included in the teaching-learning process

way to teach is through mother tongue. Translation will make it easy. easily. The will not be wasted on knowing the language. The proper tongue or regional language. It will make the learner's understand language content invother languages will be translated into mother provide the concepts invthe native language. As the focus is on the understand in other languages. So translation is the best way to innovative ideas and concepts. Some of the concepts are not easy to

Indian culture and ancient languages are the attraction for the This will again show the importance of mother tongue.

languages in the system. Learners are free to choose ancient ent whole world. New education policy has included ancient Indian languages like Sanskrit or any other language. It will fulfil the aim of saving ancient Indian traditions and languages. The learner's will choose the languages themselves and so will learn without any burden.

Today's modern world can not avoid technology. The modern technology must be included in the education system. So the artificial intelligence is included in the education. The new policy is based on access, equity, quality and accountability. Thus the mathatical thinking, scientific temper coding and vocational education is included in the system. At a perticular stage these concepts will introduced to the students. Stape by stape learning will enhance the quality of education and understanding of new concepts. Knowledge of technology, e-learning will make the learners technically strong and the study of ancient, regional traditions, ethical reasoning, and socio-emotional learning will make them aesthetically strong. The education will inculcate the feeling of social responsibility through the social interaction. It will develop the learner thoroughly. Quantitative and logical reasoning, digital literacy, computational thinking and scientific temper are necessary in the building of human personality. All these features are included in the new policy. But knowledge of languages and communication skills are equally important. Communication skills are developed with the knowledge of language. So languages are very important. The policy fulfils all the needs of a perfect personality as it includes the languages in the education system.

Understanding is very important so the medium of instruction is mother tongue upto perticular age group. Mother tongue is a proper medium to learn new things. Basic knowledge will be perfect if learned through mother tongue. Not only the medium of instruction but also the text books are in mother tongue. With the help of mother tongue learners will understand spoken as well as written language properly. They will harhly need any help to understand the concepts. Teachers will play the role of mentor only. The students are given the option of two to three regional languages. If they have some difficulty in theirotjer they can choose some other regional language.

So that the learner can not find any difficulty in the process of learning as the learners cross the initial stage they are able to opt for the foreign language. There is no compulsion of language. It can be learner's own choice. Thus at an initial stage help of mother tongue and at the secondary stage knowledge of foreign language by his own choice will make the process of learning easier and interesting.

The role of language has been the important part of teaching-learning process. The compulsion of language, perticularly a foreign language increases unnecessary burden on the learner's mind. Three language formulas have compulsion about languages. But the revised education policy has no compulsion about language. So the learner's can learn the concepts without bueder. They also have the option of selecting the language of their own choice. They can choose two to three regional languages. Mother tongue as a medium of instruction makes the learning comfortable. Tramslation is ok ne of the ways to provide various concepts in native languages. Thus the government has taken care of the learner's mental, intelectual as well as social abilities. Learners can have the better experience while learning at different age groups. The new education policy will create the better generations ahead.

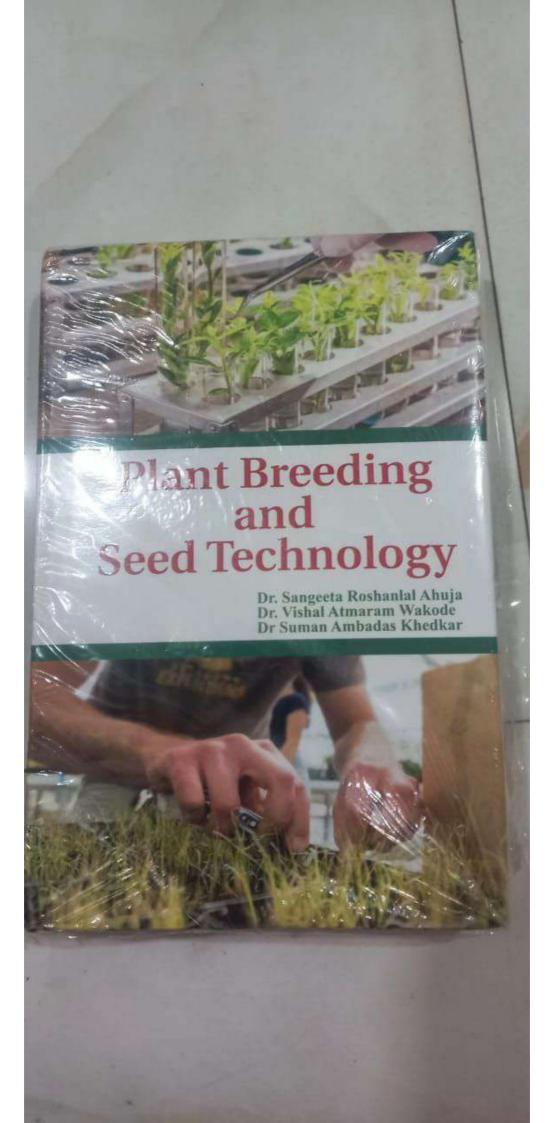
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# Plant Breeding and Seed Technology

© Reserved First Edition: 2022 ISBN: 978-93-90775-33-0

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Published by

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Publishers and Distributers 6A/540, Avas Vikas, Hanspuram Kanpur-208021

E-mail: internationalpub09@yahoo.com Website: www.internationalpublication.in

PRINTED IN INDIA

by, "Trident Enterprises", New Delhi

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### Plant Breeding and Seed Technology

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## PRINTED IN INDIA

y. "Indent Enterprises", New Delhi

### Pretace

grown worldwide. bringing major improvements in the yield, quality and diversity of crops centuries, this selection process has gradually become more scientific plants from one season to the next more than 10,000 yours ago. Over the its most primitive form since the first lamners sived the sewls of their lest meeting the demands of a changing world. Plant browling has existed in understanding has been adapted to provide more effective methods of of plant breading is a classic example of how improved biological edjective is to develop plants better adapted to human texts. The evolution and performance or agricultural and horicultural crops. The overriding The constant aim of plant browding is to improve the quality, diversity

development of crops suitable for their environment. security and developing practices of sustainable agriculture through the agencies believe that breeding new crops is important for ensuring food institutions and commercial enterprises. International development human civilization. It is now practiced worldwide by government has been practiced for thousands of years, since more the beginning of engineering, or both followed by artificial solution of progeny. Plant breading often, but not always, leads to plant domestication. Plant breading This manipulation involves either controlled pollination, genetic order to create desired generypes and phenotypes for specific purposes Plant breeding is the purposeful manipulation of plant species in

support and vascular tissues are described. Also, the fundamental organs, of plants, largely from a functional perspective. Meristeniatic derival, descriptions are given of the main analymical and morphylogical features of these fundamental bytanical sciences is outlined, and illustrations and morphology describes the external form and structure of plants. The origin organisation of the cells tissues and organs of plants whereas plant that protects the embryo. Plant anatomy describes the structure and are distinguished from other plants by the presence of a testa (seed coat) Seed plants, the most successful and diverse group of higher plants

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# Introduction, History, Aims and Objectives Plant Breeding:

### Introduction

transform the production of new plant varieties. competitive forces unleashed by these developments are likely to competitive forces in the market. While extended property rights changes in the legal framework for intellectual property rights, and firms to enter these markets and invest in plant breeding. The from scientific discoveries have provided powerful incentives for driven by interactions between advances in scientific knowledge, have created the foundation for new markets, the opportunities arising Economic outcomes in the "plant breeding industry" are being

or grower funded plant breeding programs survive for some crops they also will be under pressure to operate more commercially and plays a much more important role. Moreover, even if public and/ public plant breeding programs to one in which private plant breeding breeding in Australia faces a transition from a system dominated by of the benefits from improved varieties; it is inevitable that crop ability for plant breeding organisations. to appropriate a sizeable share privatisation of plant breeding. In conjunction with an enhanced supply chain is one of the driving forces behind the increasing This potential for modern plant breeding to create value in the

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#### **Edition**

First Edition

28 February 2022 (National Science Day)

#### **Typesetter**

Shravani Graphics, Sillod Dist. Aurangabad

#### **Publisher**

#### **Rushi Publication**

Aurangabad-431005

E-mail: rushipublication27@gmail.com

### Printed at

Ajay Print, Chikalthana Aurangabad-(M.S.) India

### **Total pages**

164

#### **Price**

Rs. 450/-

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ISBN: 978-81-951034-5-4





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### Innovative Research in

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### Investigation of Physical and Dielectric Properties of Indium **Substituted Yttrium Iron Garnet**

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### **ABSTRACT**

The Yttrium Iron Garnet (YIG) series having the general formula Y<sub>3</sub>In<sub>x</sub>Fe<sub>5-x</sub>O<sub>12</sub> (x=0.0, and 0.2) were synthesized by using double sintering solid state reaction method. The samples were characterized by X-ray diffraction technique (XRD). The X-ray diffraction studies of compositions revealed the formation of single phase cubic structure with lattice constant ranging from 12.37 to 12.40 Å to x = 0.0 and 0.2. The dielectric properties were investigated using LCR-Q meter (hp HEWLETT) in the frequency range 100 Hz to 1MHz. The dielectric constant ( $\epsilon'$ ), dielectric loss ( $\epsilon''$ ) and dielectric loss tangent (tan  $\delta$ ) were measured as a function of frequency by using LCR-Q meter. The frequency dependence of dielectric measurements was carried out for both the samples.

Keywords: Garnet, YIG, X-ray diffraction, Dielectric.

### 1. INTRODUCTION

Ferrite is a class of magnetic material used in various applications. In this current decade, ferrite has most demand in the developments of nanotechnology and its applications. Ferrites represent an important category of materials, which are in great demands due to their numerous applications in many fields. Ferrite materials exhibits many properties. The electrical and magnetic properties of ferrites are strongly dependent on their chemical composition and their method of preparation [1, 2]. It is important to optimize the electrical and magnetic properties of ferrites, for desired applications. Due to their interesting properties scientists, researchers and engineers are still interested in designing the various types of ferries material substituted with different cations with different valences and prepared by different techniques.

Among the various types of ferrites rare earth garnet especially yttrium iron garnet (YIG) is of great importance for scientist and technologist because of their applications in microwave communication devices such as circulators, gyrators and phase shifters because of its small ferromagnetic resonance line-width, high electrical resistivity and low dielectric loss in microwave regions in many fields [3]. Yttrium iron garnet (YIG) is microwave ferrite, which in polycrystalline form has specific characteristics. The magnetic and crystallographic properties of the magnetic iron garnet have been studied by many workers [4-7]. Substituted iron garnets have found extensive use in wide band non reciprocal microwave devices [8].

2. EXPERIMENTAL Sample preparation is very important in the preparation of sample. Here, the samples of ln<sup>3+</sup> substituted  $Y_3In_xFe_{5-x}O_{12}$  garnets with x=0.0 and 0.2 were prepared by well-known double sintering ceramic mediants. ceramic method in which a molar ratio of analytical  $Y_2O_3$ ,  $Fe_2O_3$  and  $In_2O_3$  (all 99.99% pure AR grade chemicals  $Y_2O_3$ ). chemicals, Mumbai) were mixed thoroughly in stoichiometric proportions and then ground to very fine powds. fine powder by using agate mortar for about 3 hr. These mixtures in powder form were pre-sintered in an Indfaan Indfur Programmable muffle furnace at 1200°C for 24 h and cooled to room temperature slowly at the rate of 2 °C for 30 h and slowly cooled to the rate of 2 °C/min. The samples were reground and re-fired at 1350°C for 30 h and slowly cooled to room temperature. The fine powdered sample was room temperature at the rate of 2° C/min., and then reground for 1 h. The fine powdered sample was pelletized at 1500 C lor 30 h and 1500 C lor 30 pelletized under the pressure 5 ton/inch<sup>2</sup>.

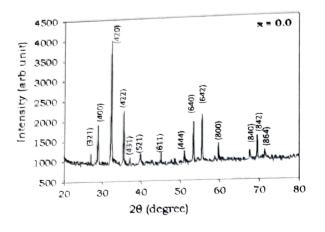
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Mixed garnet ferrites system under investigation has been structurally investigated by  $\chi_{-r_{ay}}$ .

Typical XRD pattern for x = 0.2 sample in shown in Fig. 1. diffraction technique. Typical XRD pattern for x = 0.2 sample in shown in Fig. 1.



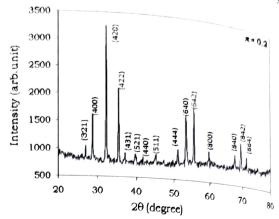


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X-ray density increase with composition 'x'. The observed variation in X-ray density is attributed to increase in volume of the samples. The crystallographic parameters (lattice constant, Xray density) are in good agreement with reported values [9]. The most intense peak (4 2 0) of XRD pattern was used to evaluate particle size of the samples. The particle size was calculated by using Scherer's formula, the values of particle size for all the composition is listed in Table 1.

Table 1: Lattice constant (a), X-ray density (dx), bulk density (dB), porosity (P) and particle size (t) of  $Y_3In_xFe_{5-x}O_{12}$ .

<b>X</b>	a (Å)	dx (gm/cm <sup>3</sup> )	d <sub>B</sub> (gm/cm <sup>3</sup> )	P (%)	t (µm)
0.0	12.370	5.179	4.13	20.25	3.42
0.2	12.401	5.224	4.19	19.97	3.25

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The dielectric constant measurements were carried out on disc shaped pellets as a function of frequency by using two probe method. The real  $\varepsilon'$  and imaginary  $\varepsilon''$  parts of the dielectric constant and loss tangent tank of V in Eq. (2) and loss tangent tano of  $Y_3In_xFe_{5-x}O_{12}$  were computed according to Smith and Wijn [10, 11]. The variation of the dielectric constant variation of the dielectric constant ε' and dielectric loss ε'' with respect to frequency at room temperature is shown in Fig. 2 (a) temperature is shown in Fig.2 (a) and (b). It can be observed from Fig. 2 (a) and (b) that dielectric constant ( $\epsilon'$ ) and dielectric loss ( $\epsilon''$ ) and dielectric loss ( $\epsilon''$ ). constant ( $\epsilon'$ ) and dielectric loss ( $\epsilon''$ ) both decreases with increase in frequency. It can also be observed that dielectric loss ( $\epsilon''$ ) decreases with increase in frequency. It can also be observed that that dielectric loss ( $\epsilon''$ ) both decreases with increase in frequency. It can also be be behaviour of dielectric constant is attain increasing frequency much more rapidly than ( $\epsilon'$ ). This behaviour of dielectric constant is attain in fertile is behaviour of dielectric constant is attributed by assuming that mechanism of polarization in ferrite is similar to that of conduction mechanism of polarization between the similar to that of conduction mechanism. Iwauchi [12] reported strong co-relation between the variation of t conduction mechanism. Iwauchi [12] reported strong co-relation between of dielectric loss tangent with frequency at 300 K s. dielectric loss tangent with frequency at 300 K for all the values of 'x'. It is observed from Fig.2 (c) that, the parameter tan δ decreases exponent. that, the parameter tan δ decreases exponentially with the increase of frequency. Room temperature

 $(\epsilon')$ , dielectric loss ( $\epsilon''$ ) and dielectric loss tangent ( $\tan \delta$ ) at 100Hz, 10 KHz and 1 MHz of Y<sub>3</sub>ln<sub>x</sub>Fe<sub>5-x</sub>O<sub>12</sub> as shown in the following Table 2.

Table 2: Room temperature dielectric constant ( $\epsilon'$ ), dielectric loss ( $\epsilon''$ ) and dielectric loss tangent (tanδ) at 100 Hz, 10 KHz and 1 MHz of Y<sub>3</sub>In<sub>x</sub>Fe<sub>5-x</sub>O<sub>12</sub>.

				F	requen	сy			
X	100 (Hz)		100 (Hz) 10 (KHz)		1(MHz)				
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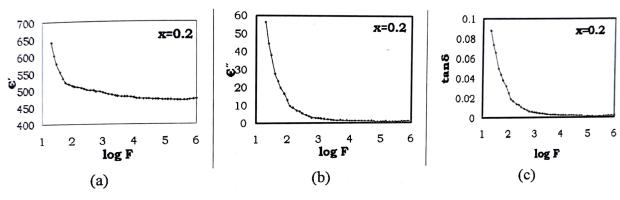


Fig .2: Variation of (a) dielectric constant ( $\epsilon'$ ), (b) dielectric loss ( $\epsilon''$ ) and (c) dielectric loss tangent (tan $\delta$ ) with logarithm of frequency (logf) of Y<sub>3</sub>In<sub>x</sub>Fe<sub>5-x</sub>O<sub>12</sub> (x = 0.2).

### 4. CONCLUSIONS

The indium substituted yttrium iron garnet system  $Y_3In_xFe_{5-x}O_{12}$  (x = 0.0, and 0.2) have been successfully prepared by standard ceramic technique. The lattice parameter increases slightly with  $In^{3+}$  substitution. The dielectric constant ( $\epsilon'$ ) and dielectric loss ( $\epsilon''$ ) both decreases with increase in frequency. It can also be observed that dielectric loss ( $\epsilon''$ ) decreases with increasing frequency much more rapidly than  $(\epsilon')$ . This behaviour of dielectric constant is attributed by assuming that mechanism of polarization in ferrite is similar to that of conduction mechanism. The dielectric loss tangent (tan  $\delta$ ) also decreases exponentially with the increase in frequency.

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### **ABOUT THE BOOK**

Today's era is focusing on innovative Research in Science and Technology. In this era there is a great development in innovative research in all branches of sciences and technologies. This book is published by the National Publisher, RUSHI Publication, Aurangabad (M.S.) entitled, "Innovative Research in Science and Technology" is guideline for promoting the researchers in various disciplines of Science, Engineering and Technology. The Authors have contributed their research work for the motivation of budding researchers. Maximum numbers of the manuscripts are related to current scientific research carried out by researchers while doing their research work and also they have written it in simple and lucid language with tables and graphs. In this book, the chapters from various research fields are systematically arranged, also each and every care has been taken to cover more branches of science disciplines.





### **RUSHI PUBLICATION**

B-115, Gajanan Colony, Gharkheda Aurangabad. (M. S.) INDIA, 431 005 **E-mail**: rushipublication27@gmail.com





# Innovative Research in Science and Technology

Editor: Dr. C. M. Kale

# Innovative Research in Science and Technology An Edited Book

### Chief Editor Dr. Chandrashekhar M. Kale

Head and Associate Professor
Department of Physics
Indraraj Arts, Commerce and Science College, Sillod
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#### **Edition**

First Edition

28 February 2022 (National Science Day)

#### **Typesetter**

Shravani Graphics, Sillod Dist. Aurangabad

#### **Publisher**

#### **Rushi Publication**

Aurangabad-431005

E-mail: rushipublication27@gmail.com

### Printed at

Ajay Print, Chikalthana Aurangabad-(M.S.) India

### **Total pages**

164

#### **Price**

Rs. 450/-

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ISBN: 978-81-951034-5-4





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### Innovative Research in

### Science and Technology

(An Edited Book)

### Investigation of Physical and Dielectric Properties of Indium **Substituted Yttrium Iron Garnet**

### Dr. R. G. Vidhate

Department of Physics, Anandrao Dhonde Alias Babaji Mahavidyalaya, Kada. Dist. Beed

Email: rgvidhate@rediffmail.com

### **ABSTRACT**

The Yttrium Iron Garnet (YIG) series having the general formula Y<sub>3</sub>In<sub>x</sub>Fe<sub>5-x</sub>O<sub>12</sub> (x=0.0, and 0.2) were synthesized by using double sintering solid state reaction method. The samples were characterized by X-ray diffraction technique (XRD). The X-ray diffraction studies of compositions revealed the formation of single phase cubic structure with lattice constant ranging from 12.37 to 12.40 Å to x = 0.0 and 0.2. The dielectric properties were investigated using LCR-Q meter (hp HEWLETT) in the frequency range 100 Hz to 1MHz. The dielectric constant ( $\epsilon'$ ), dielectric loss ( $\epsilon''$ ) and dielectric loss tangent (tan  $\delta$ ) were measured as a function of frequency by using LCR-Q meter. The frequency dependence of dielectric measurements was carried out for both the samples.

Keywords: Garnet, YIG, X-ray diffraction, Dielectric.

### 1. INTRODUCTION

Ferrite is a class of magnetic material used in various applications. In this current decade, ferrite has most demand in the developments of nanotechnology and its applications. Ferrites represent an important category of materials, which are in great demands due to their numerous applications in many fields. Ferrite materials exhibits many properties. The electrical and magnetic properties of ferrites are strongly dependent on their chemical composition and their method of preparation [1, 2]. It is important to optimize the electrical and magnetic properties of ferrites, for desired applications. Due to their interesting properties scientists, researchers and engineers are still interested in designing the various types of ferries material substituted with different cations with different valences and prepared by different techniques.

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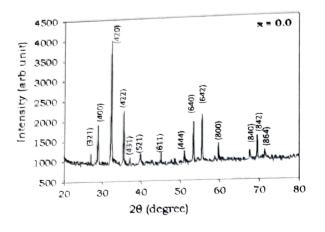
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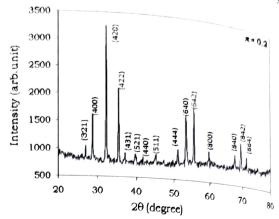


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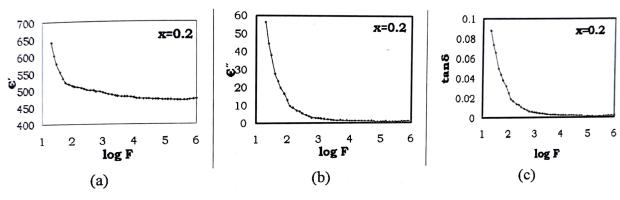


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Today's era is focusing on innovative Research in Science and Technology. In this era there is a great development in innovative research in all branches of sciences and technologies. This book is published by the National Publisher, RUSHI Publication, Aurangabad (M.S.) entitled, "Innovative Research in Science and Technology" is guideline for promoting the researchers in various disciplines of Science, Engineering and Technology. The Authors have contributed their research work for the motivation of budding researchers. Maximum numbers of the manuscripts are related to current scientific research carried out by researchers while doing their research work and also they have written it in simple and lucid language with tables and graphs. In this book, the chapters from various research fields are systematically arranged, also each and every care has been taken to cover more branches of science disciplines.

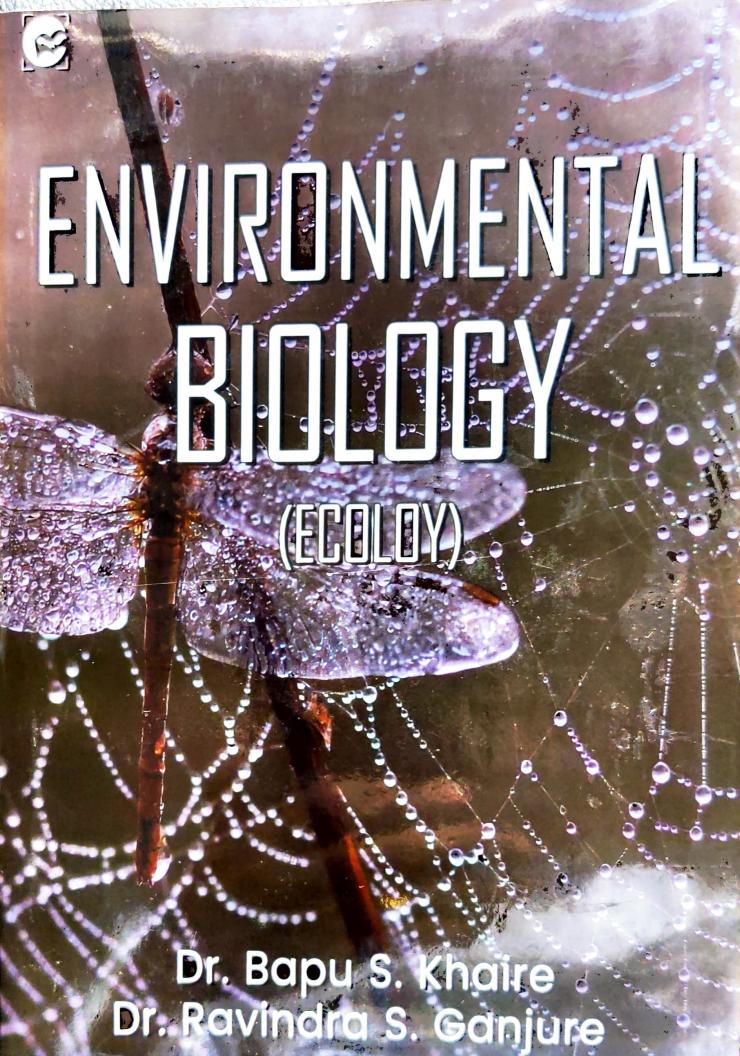




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"Environment Biology (Ecology)"

By: Dr. Bapu. S. Khaire & Dr. Ravindra S. Ganjure

ISBN: 978-93-5481-007-7

**Education 1st Edition** 

**Book Formatting: Arjun Dixit** 

Cover Design: Ronak Chavda

Price: INR 399 /-

Printed in India by: booksclub.in

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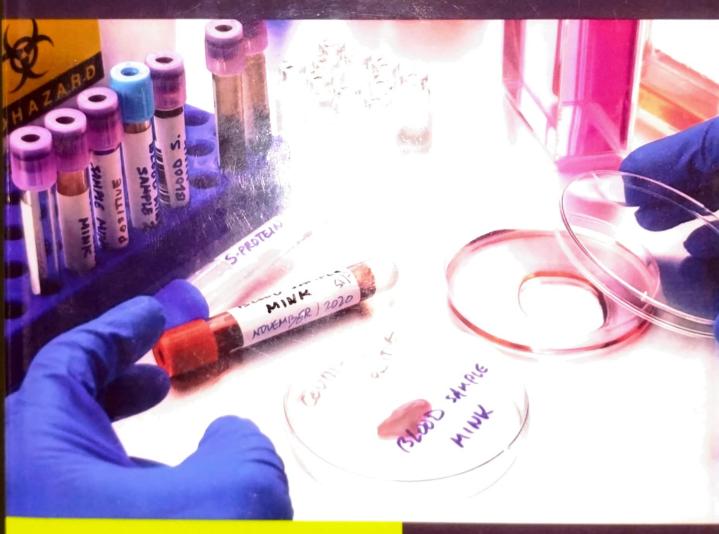
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ISBN: 978-93-90753-74-1

# A MANUAL OF - FISH PATHOLOGY



Dr. Sambhaji Ovhal, Dr. Sandeep Anarse



## A MANUAL OF - FISH PATHOLOGY

- Dr. Sambhaji Ovhal,
- Dr. Sandeep Anarse

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ISBN: 978-93-90753-74-1

Published by Novateur Publication, Pune, M.S., India. First Printing, 2022.

### **Novateur Publication**

466, Sadashiv Peth, Pune, Maharashtra, India-411030 www.novateurpublication.com

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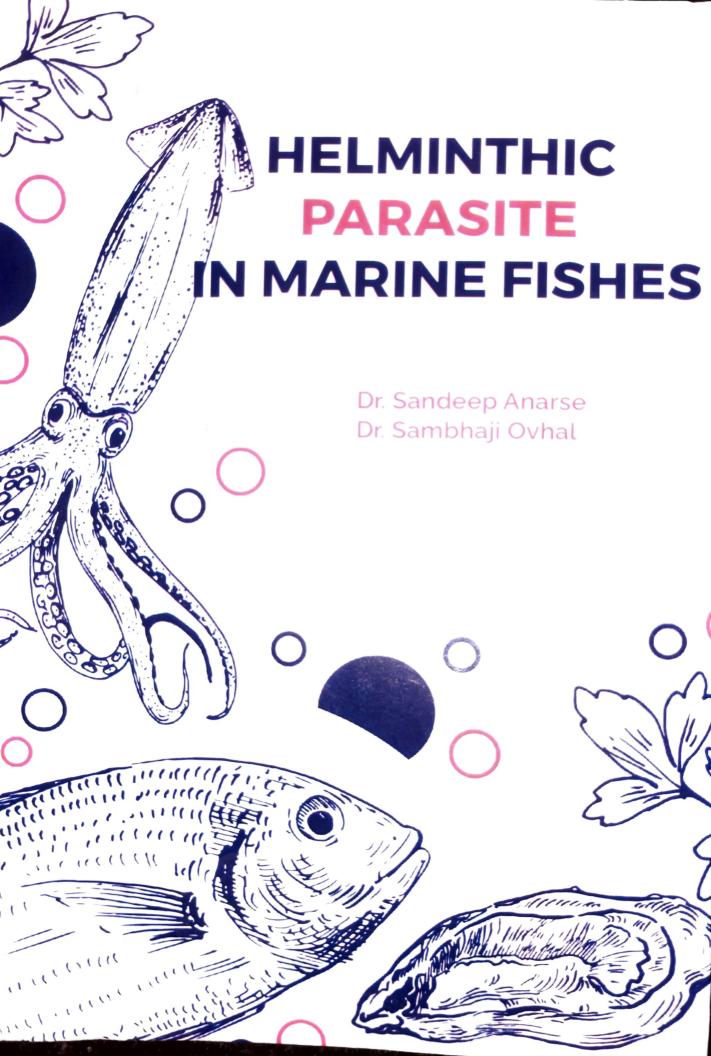


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ISBN: 978-93-90753-74-1



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ISBN: 978-93-94707-32-0

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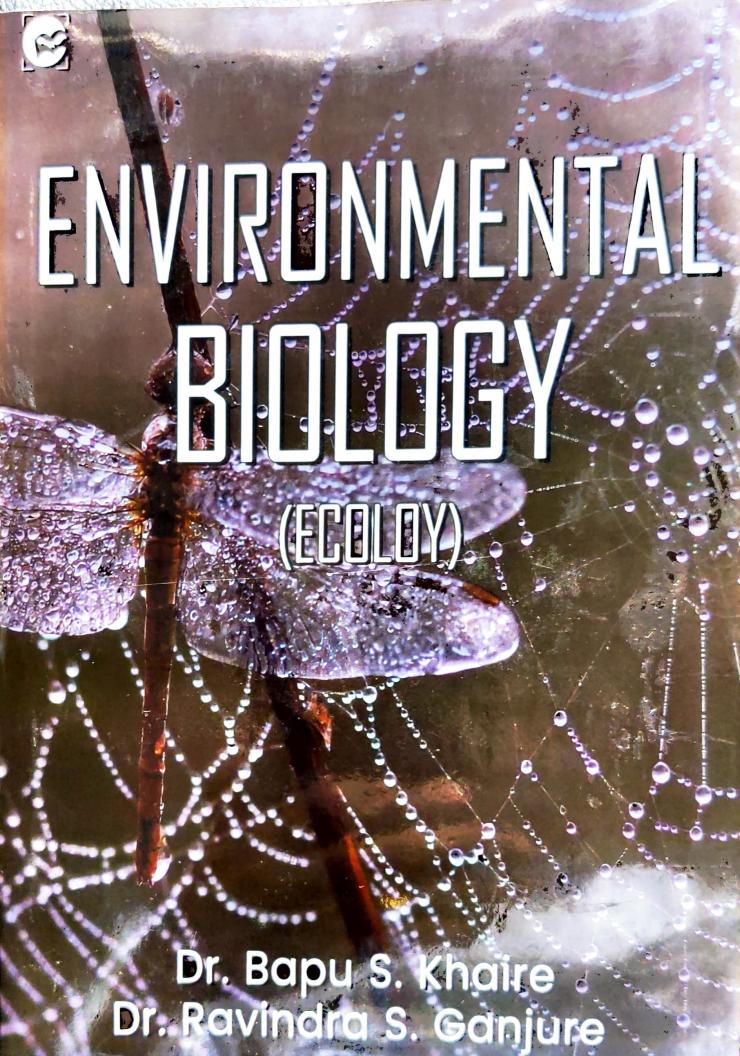
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Cover Design: Ronak Chavda

Price: INR 399 /-

Printed in India by: booksclub.in

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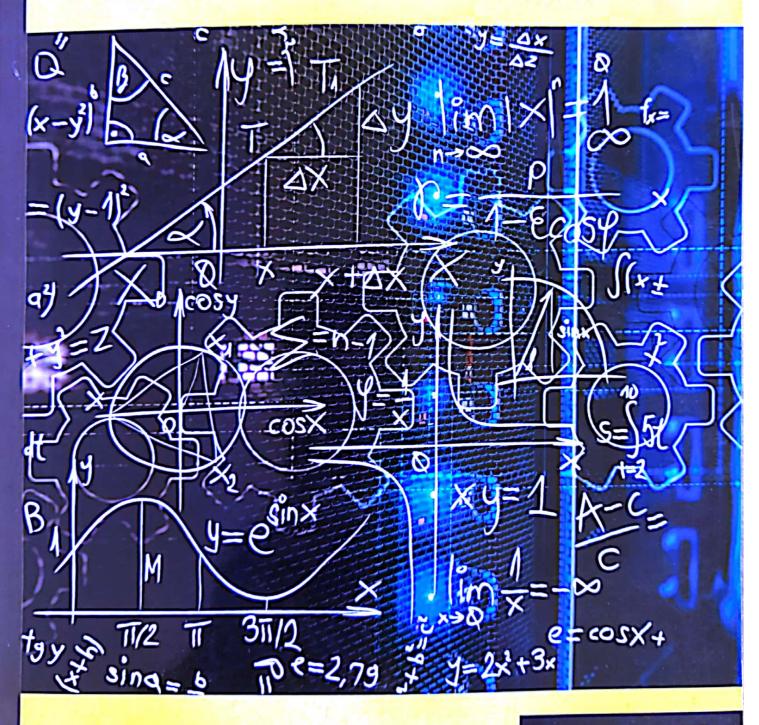
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ISBN: 978-93-90753-35-2

## INTEGRAL TRANSFORM AND ITS APPLICATIONS





Dr. D. S. Bodkhe, Dr. G. S. Jagtap

# Integral Transform and Its Applications

- Dr. D. S. Bodkhe
- Dr. G. S. Jagtap

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ISBN: 978-93-90753-35-2

Published by Novateur Publication, Pune, M.S., India. First Printing, 2022.

#### **Novateur Publication**

466, Sadashiv Peth, Pune, Maharashtra, India-411030 www.novateurpublication.com

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#### Preface....

We present a novel complicated integral transform, the complex SEE transform, in this book. The features of this transform are studied. This complex integral transform is also used to simplify the core issue to a simple algebraic equation. The solution to this basic issue may then be determined by solving this algebraic equation and applying the inverse of this complex integral transform. Finally, the complex integral transform is employed to solve higher order ordinary differential equations. Also, we present several key engineering and physics applications. This chapter of the course teaches two incredibly effective ways to solve differential equations: the Fourier and the Laplace transforms. Beside its practical application, the Fourier transform is also of vital significance in quantum physics, establishing the relationship between the position and momentum representations of the Heisenberg commutation relations. An integral transform is valuable if it helps one to convert a difficult issue into a simpler one. The transforms we will be learning in this portion of the course are largely used to solve differential and, to a lesser degree, integral equations. The theory of Fourier series and integrals has always had considerable challenges and requires a huge mathematical apparatus in dealing with concerns of convergence. It encouraged the creation of techniques of summation, albeit they did not lead to a wholly adequate solution of the issue. ... For the Fourier transform, the inclusion of distributions (thus, the space S) is inevitable either in an explicit or hidden form. ... As a consequence one may acquire everything that is wanted from the point of view of the continuity and inversion of the Fourier transform.

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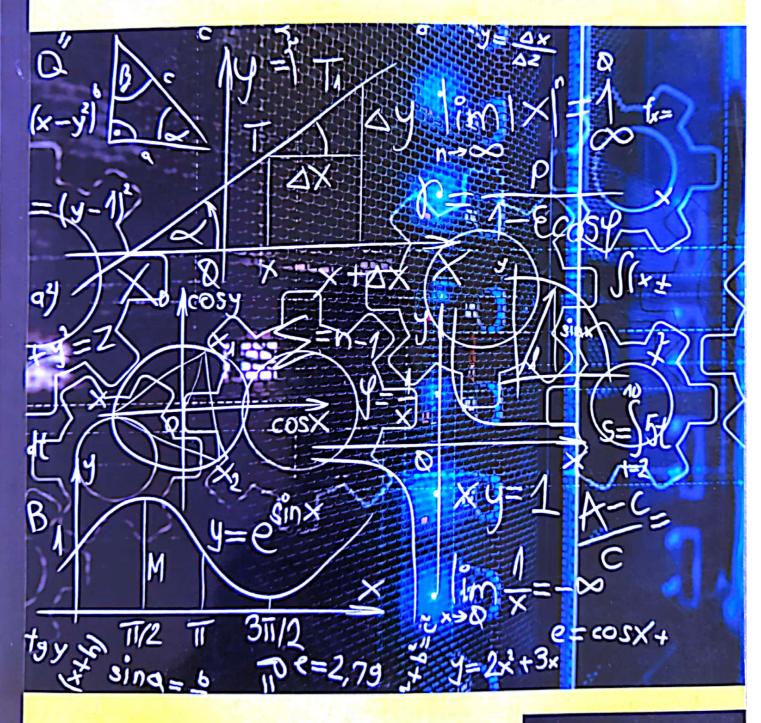


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ISBN: 978-93-90753-35-2

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ISBN: 978-93-90753-35-2

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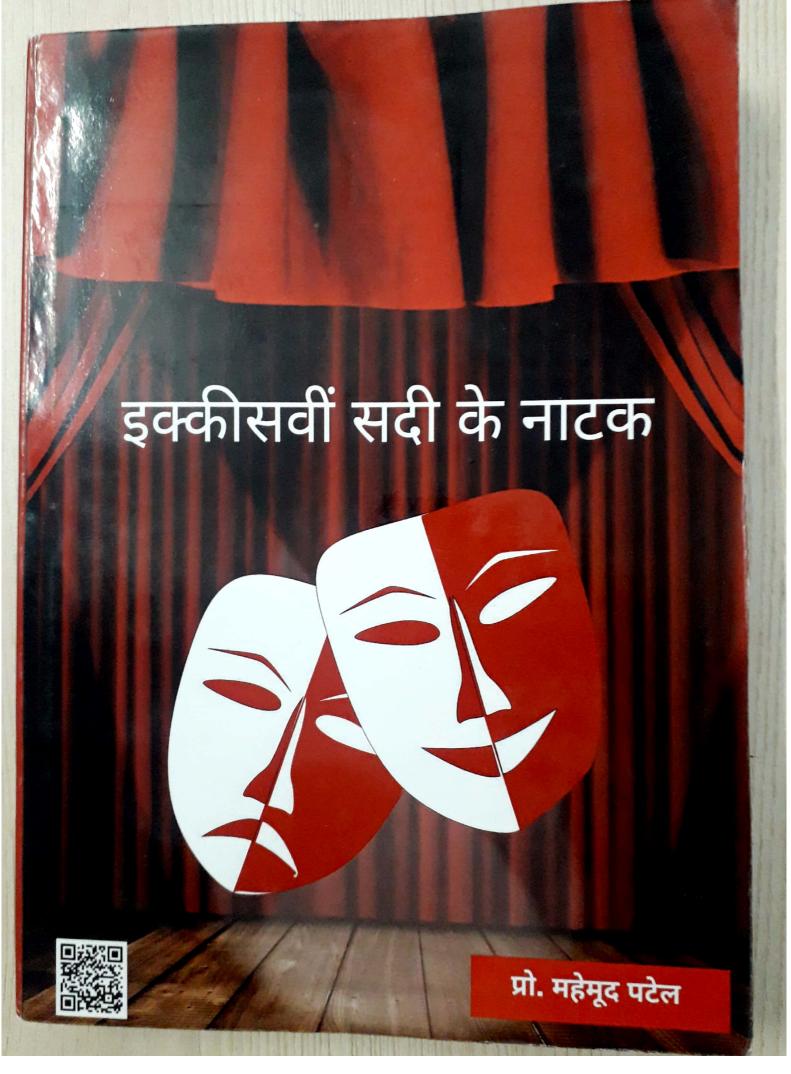
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# Globalization and Higher Education: Changing Trends in Cross Border Education

Dr.B.M.Dhonde, Dr.B.G.Kale

Abstract: Globalization is a market-driven process and it stems from a belief that markets play more important role than the State in development. Knowledge-based production has become the distinguishing characteristic of globalized economies. The intellectual capital produced by universities and research institutions has become a crucial factor of production in a globalized knowledge economy. Theological developments, especially in information technology transformed the way the world economy is organized and theway higher education is provided. This paper analyzes the effects of globalization on higher education on the one hand and trends in globalization of higher education on the other. It categorizes the globalization of higher education into three distinct, but related, phases. The first phase experienced a surge in cross-border student flow, the second phase saw the development of education hubs and branch campuses, and the third and the most recent phase witnessed program mobility and is revolutionized by the mystification of online courses such as Massive Open Online Courses.

(**Keywords:** branch campuses, cross-border mobility, education hubs, globalization, internationalization, knowledge economy, Massive Open Online Courses, MOOC)

#### Introduction:

Globalization implies free flow of goods and services across borders resulting in an integrated world economy. It is a market-driven process and stems from a belief in markets, as opposed to the state, to promote economic growth and social welfare. Events such as the disintegration of the centralized system of the Soviet Union, spread of democracy among increasingly more countries, liberalization polices following the structural adjustment regime in developing countries, and foundation of the World Trade Organization (WTO) and General Agreement in Trade in Services (GATS) have all contributed to the shaping of a globalized economy. In the early 1990s, globalization was perceived to bring "unprecedented prosperity to all" The end of the same

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