Nonlinear and Dynamic programming Addison-Reading Mass.

Hira, Operations Research -An introduction, publishing Co., Inc., New Yark.

Swarup, P.K. Gupta and Man Mohan, operations sultan chand & Sons, New Delhi

Rao, optimization Theory and Applications, Wiley , New Delhi.

Kumar Gupta and D.S. Hira, Operations Research- Chand & Company Ltd., New Delhi.

M.Sc. (MATHEMATICS) **III SEMESTER**

COURSE CODE:MSM S02 **COURSE TYPE: OSC**

COURSE TITLE: INTELLECTUAL PROPERTY, HUMAN RIGHTS & ENVIRONMENT: BASIC

CREDIT:0 **HOURS: 0**

THEORY: 6 PRACTICAL : 0 **THEORY: 90 PRACTICAL : 0**

MARKS:

THEORY: 100(20+80) **PRACTICAL : 0**

UNIT -1 12 HOURS

Patents :- Introduction & concepts, Historical Overview.
Subject matter of patent.
Kinds of Patents.
Development of Law of Patents through international treaties and conventions including TRIPS Agreement.
Procedure for grant of patents & term of patent.
Surrender, revocation and restoration of patent.
Rights and obligations of patentee
Grant of compulsory licenses
Infringement of Patent and legal remedies
Offences and penalties
Discussion on leading cases.

UNIT -2 24 HOURS

Meaning of Copyright, Historical Evolution.
Subject matter of copyright.
Literary works
Dramatic Works & Musical Works
Computer Programme
Cinematographic films
Registration of Copyrights
Term of Copyright and Ownership of Copyrights
Neighboring Rights
Rights of Performers & Broadcasters
Assignment of Copyright.
Author's Special Righs (Moral Rights)
Infringement of Copyrights and defenses

Remedies against infringement (Jurisdiction of courts and penalties)
International Conventions including TRIPS Agreement WIPO, UCC, Paris Union, Berne Convention-UNESCO.
Discussion on leadirg cases

UNIT -3 12 HOURS

Rights: meaning
Human Rights-Meaning & essentials
Human Rights Kinds.
Rights related to life- Liberty, Equals & Disable.

UNIT -4 24 HOURS

National Human Rights Commission
State Human Rights Commission
High Court
RegionalCourt
Procedure & Functions of High & Regional Court.

UNIT -5 18 HOURS

Right to environment as human right
International humanitarian law and environment
environment and conflict management
nature and origin of international environmental organisation (IEOS)
Introduction to sustainable development and environment
sustainable development and environmental governance

SUGGESTED READINGS

1. G.B.Reddy, Intellectual Property Rights and Law, Gogia Law Agency, Hyderabad.
2. S.R.Myneni, Intellectual property Law, Eastern Law House. Calcutta
3. P Narayanan Intellectual Property Rights and Law (1999), Eastern Law House, Calcutta, India
4. Vikas Vashistha, Law and Practice of Intellectual Property,(1999) Bharat Law House, New Delhi.

5. Comish W.R Intellectual property,3rd ed, (l996), Sweet and Maxwell.
6. P.S. Sangal and Kishor Singh, Indian Patent System and Paris Convention,
7. Comish W.R Intellectual Property, Patents, Copyrights and Allied Rights, (2005)
8. BibeckDebroy, Intellectual Property Rights, (1998), Rajiv Gandhi Foundation

M.Sc. CHEMISTRY THIRD SEMESTER

COURSE CODE: MSCS03 **COURSE TYPE: OSC**

COURSE TITLE : INTELLECTUAL PROPERTY RIGHTS, HUMAN RIGHTS & ENVIRONMENT: BASICS

CREDIT: THEORY: PRACTICAL : 6	HOURS: 90 THEORY: 90 PRACTICAL : 135
MARKS: 80 + 20 THEORY: PRACTICAL :	MARKS: THEORY: PRACTICAL :

OBJECTIVE:

- Understands the concept and place of research in concerned subject
- Gets acquainted with various resources for research
- Becomes familiar with various tools of research
- Gets conversant with sampling techniques, methods of research and techniques of analysis of data.

UNIT-1 12 Hrs

- Patents :- Introduction & concepts, Historical Overview.
- Subject matter of patent.
- Kinds of Patents.
- Development of Law of Patents through international treaties and conventions including TRIPS Agreement.
- Procedure for grant of patents & term of Patent.
- Surrender, revocation and restoration of patent.
- Rights and obligations of Patentee
- Grant of compulsory licenses
- Infringement of Patent and legal remedies
- Offences and penalties
- Discussion on leading cases.

UNIT-2 24 Hrs

- Meaning of Copyright, Historical Evolution,
- Subject matter of copyright.
- Literary works
- Dramatic Works & Musical Works
- Computer Programme
- Cinematographic films
- Registration of Copyrights

- Term of Copyright and Ownership of Copyrights
- Neighboring Rights
- Rights of Performers & Broadcasters
- Assignment of Copyright.
- Author's Special Rights (Moral Rights)
- Infringement of Copyrights and defenses
- Remedies against infringement (Jurisdiction of Courts and penalties)
- International Conventions including TRIPS Agreement WIPO, UCC, Paris Union, Berne Convention, UNESCO.
- Discussion on leading cases.

UNIT-3 10 Hrs

- Rights: Meaning
- Human Rights-Meaning & Essentials
- Human Rights Kinds
- Rights related to Life, Liberty, Equals & Disable.

UNIT-4 24 Hrs

- National Human Rights Commission
- State Human Rights Commission
- High Court
- Regional Court
- Procedure & Functions of High & Regional Court.

UNIT-5 20 Hrs

- Right to Environment asHuman Right
- International HumanitarianLaw and Environment
- Environment and ConflictManagement
- Nature and Origin ofInternational EnvironmentalOrganisations (IEOs)
- Introduction to SustainableDevelopment and Environment
- Sustainable Development and Environmental Governance.

SUGGESTED READINGS

1. G.B.Reddy, *Intellectual Property Rights and Law,* Gogia Law Agency, Hyderabad.
2. S.R.Myneni, *Intellectual Property Law,* Eastern Law House, Calcutta

B.Sc. III
BIOTECHNOLOGY

PAPER – I

PLANT, ENVIRONMENTAL AND INDUSTRIAL BIOTECHNOLOGY

MM-50

UNIT-I

1. Introduction to Plant cell and Tissue culture: History, Scope and Application.
2. Tissue culture Media and Cellular Differentiation.
3. Protoplast Isolation and Fusion, Organogenesis, Embryogenesis, Anther and Ovary culture.

UNIT-II

1. Agrobacterium Mediated Transformation, Ti and Ri Plasmid.
2. Bt Gene and Bt Cotton, Edible vaccines and Genetically modified plants- Golden Rice, Herbicide Resistance, Drought Resistance.
3. Germplasm storage and Cryopreservation.

UNIT-III

1. General Introduction and Scope of Environmental Biotechnology.
2. Environmental Pollution and its type.
3. Solid Waste Management: Principle of management, Types of Sources, Effect of Solid waste, Concept of composting and Vermi composting.
4. Wastewater Treatment: Physical, Chemical, and Biological.

UNIT-IV

1. Biofertilizer and Biopesticides- Cyanobacteria, Bacteria, Fungi; Significance and Practices.
2. Bioremediation of Xenobiotics compounds.
3. Types of IPR-Patents, Copyright, Trademark, G.I., Patenting Genes and Life form.

UNIT-V

1. Types of Bioreactor: Design of Stirred tank, Fluidized bed.
2. Fermentation: Lactic acid and Alcohol.
3. Industrially important Microorganisms: Isolation, Preservation (Slant, Mineral Oil and Lyophilize) and its application.
4. Food Technology: Food spoilage. Canning, Packing and Food Preservation.

ENGLISH LANGUAGE AND INDIAN CULTURE

(Based on Revised Unified Foundation Course for B.A., B.Sc., B.H.Sc and B.Com I Year Students in force from Academic Session 1999-2000)

Editors

Dr. R.S. Pathak

Dr. Nirmaljeet Oberoi

Dr. M.C. Saxena

Prof. Zaki-ur-Rahman Khan

General Editor

Dr. Dhananjoy Verma

Chairman

Central Board of Studies of Foundation Course

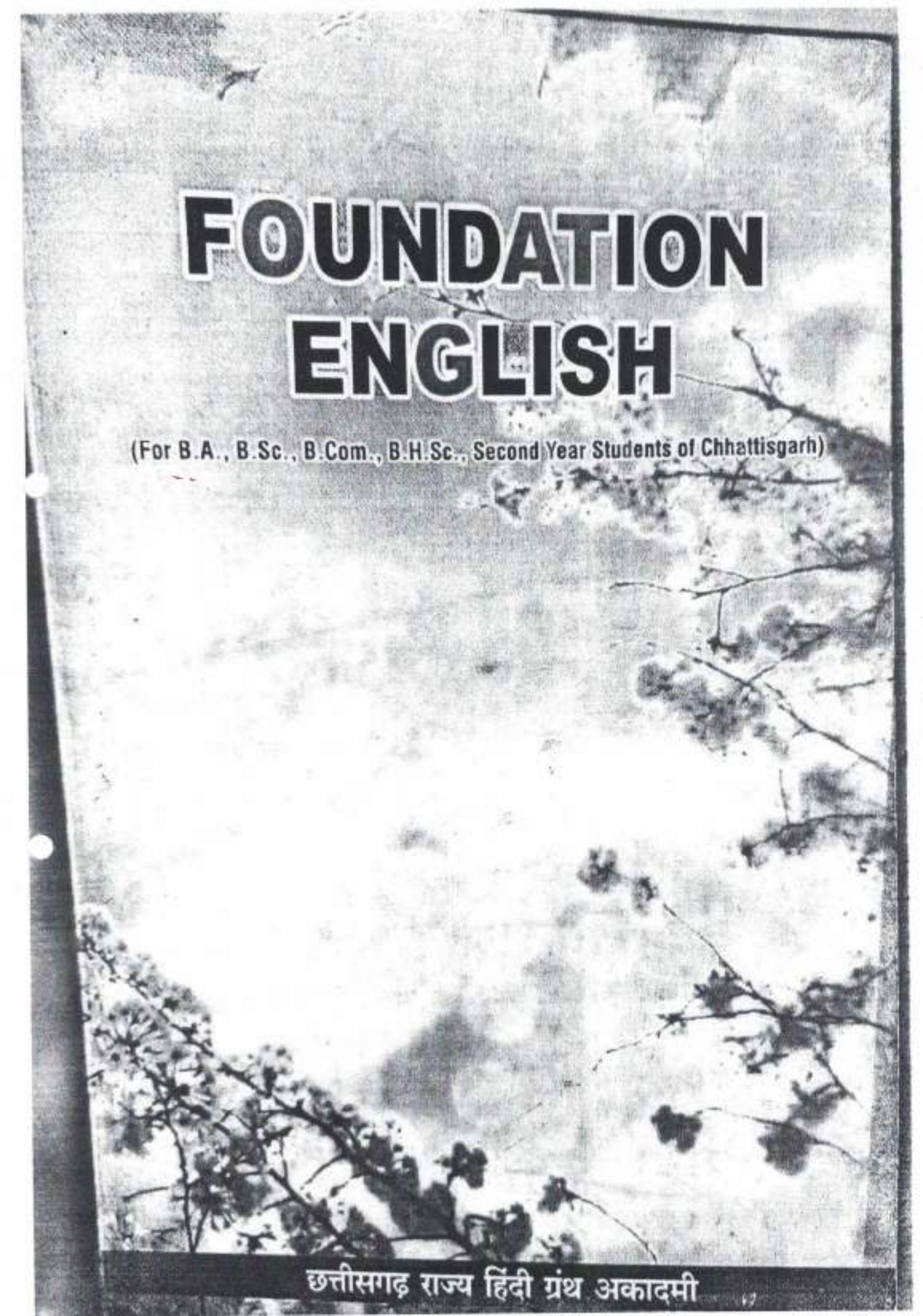
Madhya Pradesh Hindi Granth Academy

Bhopal

CONTENTS

FOUNDATION ENGLISH

(For B.A., B.Sc., B.Com., B.H.Sc., Second Year Students of Chhattisgarh)



छत्तीसगढ़ राज्य हिंदी ग्रंथ अकादमी

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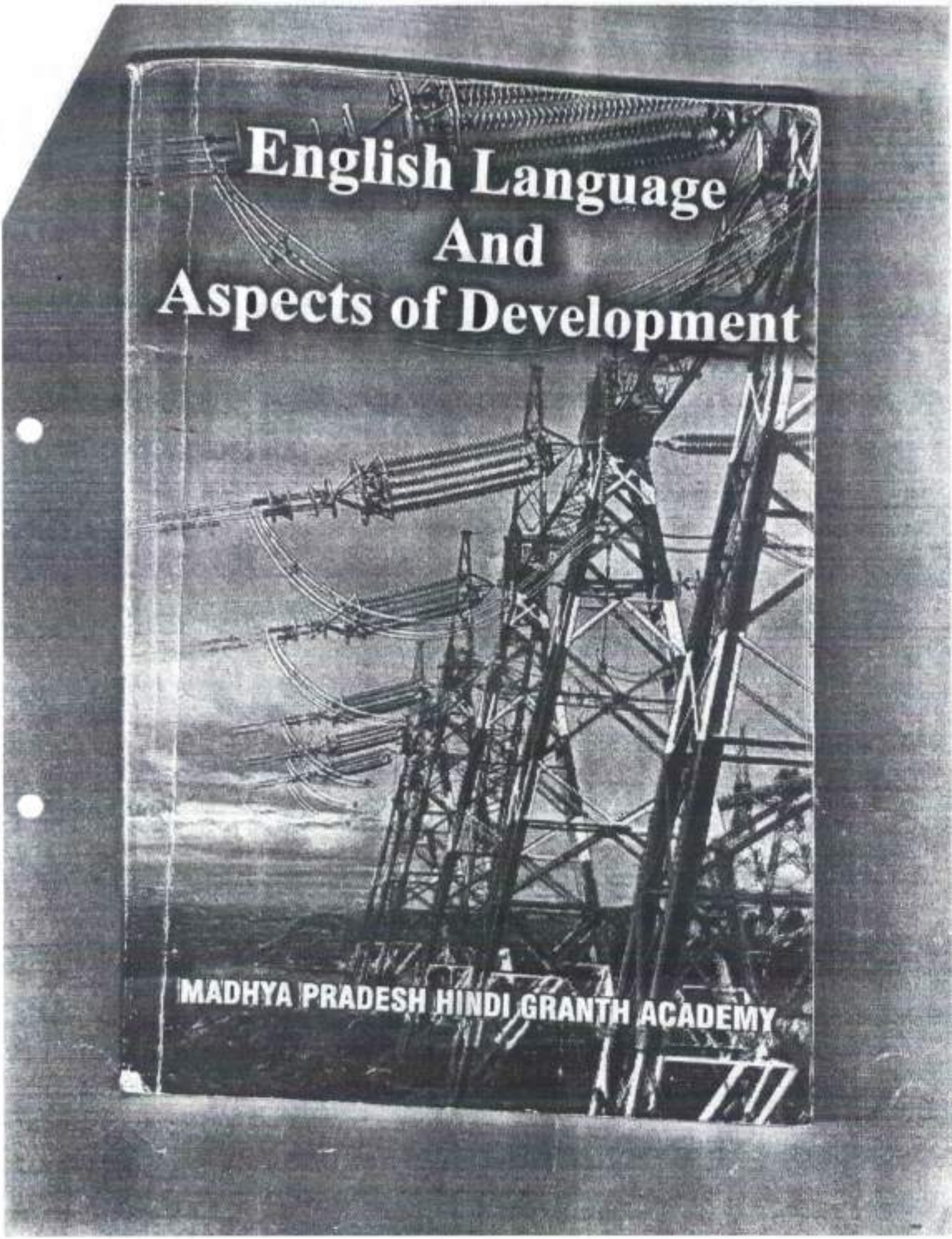
English Language
And
Aspects of Development
MADHYA PRADESH HINDI GRANTH ACADEMY

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हिंदी भाषा

भाग - दो, आधार पाठ्यक्रम

प्रश्न पत्र - प्रथम (हिंदी भाषा) पूर्णांक 75

विषय-सूची

अनुक्रमणिका

क्रन्दन कंपित अधर मौन स्मित,
राहु ग्रसित
शरदेन्दु हासिनी!

चिंतित भृकुटि क्षितिज तिमिरांकित,
नमित नयन-नभ वाष्पाच्छादित,
आनन श्री छाया-शशि उपमित,
ज्ञान-मूढ़
गीता प्रकाशिनी!

सफल आज उसका तप संयम,
पिला अहिंसा स्तन्य सुधोपम,
हरती जन-मन भय, भव-तम-भ्रम,
जन-जननी
जीवन विकासिनी!

(भारत माता कविता पंत जी ने जनवरी 1940 में लिखी थी। उस समय भारत मा
पराधीनता की बेड़ियों में जकड़ी हुई थी अतः उसकी विपन्नता, दीनता तथा विषाद का चित्र
कवि ने किया है।)

लघुउत्तरीय प्रश्न

1. भारत माता कहा रहती है?
2. भारत माता सिर झुकाये किसके नीचे निवास कर रही है?
3. हमारी भारतमाता किसकी उन्नति चाहती है?
4. भारत माता का तप कब सफल हुआ?
5. भारत माता कविता का आशय समझाइए।
6. पंत जी की भाषा-शैली पर प्रकाश डालिए।
7. कवि ने प्रवासिनी किसको कहा है और क्यों?

B.SC.-III (BOTANY) PAPER –I

(ANALYTICAL TECHNOLOGY PLANT PATHOLOGY, EXPERIMENTAL EMBRYOLOGY, ELEMENTARY BIOSTATISTICS, ENVIRONMENTAL POLLUTION AND CONSERVATION)

UNIT-I

Structure, Principle and applications of analytical instrumentation.

Chromatography technique, Oven, Incubator, Autoclave, Centrifuge, Spectrophotometere

UNIT-II

Plant Tissue culture techniques, growth media, totipotency, protoplast culture, somatic hybrids and cybrids, micropropagation , somaclonal variations, haploid culture.

Analytical techniques: Microscopy-Light microscope, Electron microscope

UNIT-III

General principles of plant pathology, general symptoms of fungal, bacterial and viral diseases, mode of infection, diseases resistance and control measures, plant quarantine. A study of epidemiology and etiology of following plant diseases.

Rust diseases of wheat, Tikka diseases of groung nut, Red rot of sugar can, Bacterial blight of ri Yellow vein mosaic of b hindi, Little leaf of brinjal.

UNIT-IV

Introduction to pollution, green house gases, Ozone depletion, Dissolve oxygen, B.O.D., C.O.D.

Bio magnification, Eutrophication, Acid precipitation, Phytoremediation, Plant indicators,. Biogeographical Zones of India, Concept of biodiversity, CBD, MAB, National parks and

MICROBIOLOGY

BSc-3rd

Paper- I: Medical Microbiology and Immunology

UNIT-1: AIR BORNE DISEASES

Air borne diseases: Types- Tuberculosis, Pertussis, Diphtheria, Influenza, Small & Chicken pox, Mumps, Measles. Symptoms, treatment and prevention.

UNIT-2: WATER BORNE DISEASES

Concept and cause of water borne diseases; Types, Hepatitis, Dysentery, Diarrhea, Cholera, typhoid. Symptoms, treatment and prevention.

UNIT-3: CLINICAL DISEASE AND DIAGNOSIS

Clinical diseases: Diabetes, Asthma, multiple sclerosis, rheumatoid arthritis, cancer. Symptoms, Treatment and prevention.

UNIT-4: BASIC CONCEPT OF IMMUNITY

Immune system: Structure and function of the cells, tissues and organs of immune system. Types of immunity- humoral and cell-mediated, innate, acquired immunity. **Antigen- Antibody**: types, properties, Hapten, adjuvants, Immuno-globulins: Structure types, Properties and their function - Theory of antibody production.

UNIT-5: IMMUNO DISEASE DIAGNOSIS

Methods based on Ag-Ab interaction- precipitation, agglutination, ELISA, RIA, Immuno-electrophoresis, PCR based diagnosis method for infectious diseases.

Text Books Recommended:

1. Immunology: Kuby.
2. General Microbiology by Power and Daganiwala.
3. Zinssers Microbiology by K. J Wolfgang. McGraw- Hill Company.
4. Medical Microbiology: N. C. Dey and T.K. Dey, Allied agency, Calcutta.
5. Bacteriological Techniques by FJ Baker.
6. A Textbook of Microbiology; Dubey & Maheshwari; S. chand & Sons.
7. Scott's Diagnostic Microbiology by EJ Baron.

Paper- II: Environmental, industrial and Agricultural Microbiology

UNIT-1: AIR MICROBIOLOGY

Basics of Aerobiology, Microbes in atmosphere, source of microorganism in air, droplet nuclei, infectious dust, and bio-aerosol. Factors affecting microbial survival in the air. Sampling, collection and Isolation of microbes from air.

UNIT-2: WATER MICROBIOLOGY

Basic concept, water zonation, eutrophication, microbial community in natural water. Determining the quality of water-bacteriological evidence for fecal pollution, indicator of fecal pollution. Water purification methods. Disinfection of potable water supply.

UNIT-3: SOIL MICROBIOLOGY,

Soil as an environmental culture medium, microbes of soil. Brief account of microbial interactions-symbiosis, mutualism, commensalism, competition, predation, parasitism. Microbiological examination of soil. Rhizosphere- concept and role of microbes, rhizosphere and non rhizosphere micro-flora. Mycorrhiza.

UNIT-4: INDUSTRIAL MICROBIOLOGY

Introduction and brief history and scope, important microbes in various industries. Fermentation- definition, types-Aerobic and anaerobic, Batch and SSF. Important products bread, cheese, vinegar, fermented dairy products and oriented fermented food involving microbes. Microbial cells as food, SCP –mushroom cultivation, production of alcohol and fermented beverages, beer and Wine

UNIT-5: AGRICULTURAL MICROBIOLOGY

History of Agricultural Microbiology: Microbes and their importance in maintenance of soil, Biogeochemical cycles, role of microbes in maintaining the fertility of soil. Bio fertilizers –Bacterial, azotobacter and vermiform compost. Soil microorganism - association with vascular plants- phyllosphere, Rhizobium, Rhizoplane associative nitrogen fixation. Bio-fertilizers - Cyanobacterial and Azolla

Text Books Recommended:

1. Hugo, W.B., Russell, A.D, pharmaceutical Microbiology 4th edition. Blackwell scientific publications / Oxford.
2. Russell and Ayliffe, G. A. J (1982) Principles and practice of Disinfection, preservation and sterilization Oxford:
3. Gregory P.H. Microbiology of the atmosphere.2nd edition. Leonard Hill.
4. Food Microbiology by WC Frazier and D Westhoff.
5. Agricultural Microbiology by Bhagyaraj and Rangaswamy.
6. Bioremediation by KH Baker and DS Herson

M.Sc. (Mathematics) THIRD SEMESTER

Course Code	Course Type	Course (Paper/ Subjects)	Credits	Contact Hours per Week			EoSE Duration (Hrs.)	
				L	T	P	Thy	P
MSM 301	CCC	Integration Theory and Functional Analysis (I)	6	4	3	0	3	0
MSM 302	CCC	Partial Differential Equtions & Mechanics (I)	6	4	3	0	3	0
MSM 303	CCC	Operations Research (I)	6	4	3	0	3	0
MSM S03	OSC	Intellectual Property, Human Right Environment : Basics	6	4	3	0	3	0
MSM C01	ECC/CB	Numerical Analysis	6	4	3	0	3	0
MSM C02	ECC/CB	Mathematical Modeling						
MSM C03	ECC/CB	Fluid Dynamics						
MSM C04	ECC/CB	Fuzzy Sets and their Application-I						
MSM C05	ECC/CB	Computer Fundamental and Programming in C						
MINIMUM CREDITS IN INDIVIDUAL SUBJECT IS 6 AND IN COMPLETE SEMESTER IT WOULD BE 30			TOTAL =30					

Course Code	Course Type	Course (Paper/Subjects)	Credits	Contact Hours Per Week			EoSE Duration (Hrs.)		Marks	
				L	T	P	Thy	P	SEE	TA
MSC 401	CCC	BIOLOGICAL CHEMISTRY	6	4	3	00	3	0	70	30
MSC 402	CCC	ELECTROCHEMICAL ENERGY, MATERIAL AND NUCLEAR CHEMISTRY	6	4	3	00	3	0	70	30
MSC 403	ECC	ELECTIVE1	6	4	3	00	3	0	70	30
MSC403	ECC	ELECTIVE II	6	4	3	00	3	0	70	30
MSC 403A	ECC/CB	HETEROCYCLIC COMPOUNDS AND MEDICINAL CHEMISTRY	6	4	3	00	3	0	70	30
MSC 403B	ECC/CB	Environmental Chemistry	6	4	3	00	3	00	70	30
MSC 403C	ECC/CB	INORGANIC RINGS, CHAINS, CLUSTERS AND INORGANIC MATERIALS								
MSC 403D	ECC/CB	INTRODUCTION TO NANOSCIENCE								
MSC 403E	ECC/CB	BIO-INORGANIC CHEMISTRY								

MSC 403F	ECC/CB	POLYMER CHEMISTRY								
MSC 403G	ECC/CB	TRIBAL STUDIES								
MSC 403H	ECC/CB	INTELLECTUAL PROPERTY, HUMAN RIGHTS AND ENVIRONMENT:BASICS								
MSC 405	CCC	LAB COURSE-I	6	0	0	09	0			100
MSC 406	CCC	DISSERTATION	6	0	0	09	0			100
MINIMUM CREDITS IN INDIVIDUAL SUBJECT IS 6 AND IN COMPLETE SEMESTER IT WOULD BE 36			Total Credit = 36							