



MANONMANIAM SUNDARANAR UNIVERISTY,
TIRUNELVELI-12

SYLLABUS

UG - COURSES – AFFILIATED COLLEGES

Course Structure for BA English

(Choice Based Credit System)

(with effect from the academic year 2024-2025 onwards)



Semester-III				
Part	Subject Status	Subject Title	Subject Code	Credit
I	LANGUAGE	TAMIL/MALAYALAM/HINDI		3
II	ENGLISH	ENGLISH		3
III	CORE V	BRITISH LITERATURE II		5
III	CORE VI	AMERICAN LITERATURE II		5
III	ELECTIVE III	LITERARY GENRES AND TERMS		3
IV	SEC 4	ENGLISH FOR CAREER		1
IV	EVS	ENVIRONMENTAL EDUCATION		2
		NAAN MUDHALVAN		2



Total Marks: 100 Internal Exam: 25 marks + External Exam: 75 marks

A. Scheme for internal Assessment:

Maximum marks for written test: **20 marks**

3 internal tests, each of **1 hour** duration shall be conducted every semester.

To the average of the **best two** written examinations must be added the marks scored in. The **assignment** for 5 marks.

The break up for internal assessment shall be:

Written test- 20 marks; Assignment -5 marks Total - 25 marks

B. Scheme of External Examination

3 hrs. examination at the end of the semester

A – Part : 1 mark question two - from each unit

B – Part : 5 marks question one - from each unit

C – Part : 8 marks question one - from each unit

➤ **Conversion of Marks into Grade Points and Letter Grades**

S.No	Marks	Letter Grade	Grade point (GP)	Performance
1	90-100	O	10	Outstanding
2	80-89	A+	9	Excellent
3	70-79	A	8	Very Good
4	60-69	B+	7	Good
5	50-59	B	6	Above Average
6	40-49	C	5	Pass
7	0-39	RA	-	Reappear
8	0	AA	-	Absent

➤ **Cumulative Grade Point Average (CGPA)**

$$CGPA = \frac{\Sigma (GP \times C)}{\Sigma C}$$

- **GP** = Grade point, **C** = Credit
- CGPA is calculated only for Part-III courses
- CGPA for a semester is awarded on cumulative basis

➤ **Classification**

- First Class with Distinction : CGPA $\geq 7.5^*$
- First Class : CGPA ≥ 6.0
- Second Class : CGPA ≥ 5.0 and < 6.0
- Third Class : CGPA < 5.0



Part I TAMIL தமிழக வரலாறும் பண்பாடும்

அலகு 1

தொல் பழங்கால வரலாறும் சங்ககால வரலாறும்

1. தொல் தமிழர்
2. பழைய கற்காலம்
3. புதிய கற்காலம்
4. உலோகக் காலம்
5. அகழ்வாராய்ச்சியில் தமிழும் தமிழரும் (கீழடி வரை)
6. திணை வாழ்வியல் (களவு வாழ்க்கை, கற்பு வாழ்க்கை, உணவு, அணிகலன்கள், வாணிகம், விளையாட்டுகள்)
7. கல்வியும் கலைகளும்
8. தமிழ் வளர்த்த சங்கம்
9. சங்க கால ஆட்சி முறை
10. அயல்நாட்டுத் தொடர்புகள்

அலகு 2

ஆட்சியர் வரலாறு

1. மூவேந்தர் வரலாறு
2. பல்லவர் வரலாறு
3. நாயக்கர் ஆட்சி
4. முகம்மதியர் ஆட்சி
5. மராட்டியர் ஆட்சி

அலகு 3

ஐரோப்பியர் கால வரலாறு

1. போர்த்துகீசியர்
2. டச்சுக்காரர்கள்
3. டேனிஸ்காரர்கள்
4. பிரெஞ்சுக்காரர்கள்
5. ஆங்கிலேயர்கள்
6. பாளையக்காரர்கள்
7. இந்தியா விடுதலை போராட்டத்தில் தமிழ்நாடு

அலகு 4

விடுதலைக்குப்பின் தமிழ்நாட்டு வரலாறு

1. மொழிப்போராட்டம்
2. சமூக மறுமலர்ச்சி
3. தொழில்நுட்ப வளர்ச்சி

அலகு 5

மொழிப்பயிற்சி

- நிறுத்தக் குறிகள்
- கலைச்சொற்கள்
- மொழிபெயர்ப்பு

Text Books

1. தமிழக வரலாறும் பண்பாடும் - கே. கே. பிள்ளை, உலகத் தமிழாராய்ச்சி நிறுவனம், சென்னை
2. தமிழர் நாகரீகம் பண்பாடும் - அ. தட்சிணாமூர்த்தி, யாழ் வெளியீடு, சென்னை
3. தமிழக வரலாறும் பண்பாடும் - வே.தி.செல்லம், மணிவாசகர் பதிப்பகம், சென்னை

Reference Books

1. தமிழக சமூகாய பண்பாட்டு கலை வரலாறு - கு சேதுராமன், என்.சி.பி.எச், சென்னை
2. தமிழர் கலையும் பண்பாடும் - அ.கா.பெருமாள், என்.சி.பி.எச், சென்னை
3. ஒரு பண்பாட்டின் பயணம்: சிந்து முதல் வைகை வரை - ஆர். பாலகிருஷ்ணன், ரோஜா முத்தையா ஆராய்ச்சி நூலகம், சென்னை



MALAYALAM - POETRY

UNIT I

This unit focus on significance of Malayalam Poetry and trends.

To familiarize the early stages of Malayalam poetry- Folklore heritage-Pattu-Bhakthi movement-Cherussey-Ezhutachan- Kunjan Nambiar-

Detailed study:

Jaritha Vilapam (Mahabharatam kilippattu) Ezhutachan

UNIT II

Romanticism –Asan- Ulloor – Vallathol

Detailed study:

1. Veena Poovu (First 7 slokas only)- Asan
2. Aa poomala- Changampuzha

UNIT III

Modernity in Malayalam poetry- First phase

Post Independent India and Modernization of Nation in Malayalam poetry

Detailed study

1. Yuga Parivarthanam- Vailoppilli Sreedhara Menon
2. Gandhiyum Godseyum- N .V.Krishna Warriar

UNIT IV

Modernity in Malayalam poetry- second phase

Detailed Study

1. Gajendra moksham _ Sugathakumari
2. Kozhi – Kadammanitta
3. Megharoopan – Aattoor Ravi Varma
4. Budhanum Attin kuttiyum – A. Ayyappan

UNIT V

This unit introduces the nature of samakalika kavitha It also evaluates s a m a k a l i k a kavitha,- the contemporary poetry originated after modern poetry- women, Dalit, environment and cyber issues.

Detailed study

1. Pattanbipuzhamanalil – P P Ramachandran
2. Malayalakavithakku oru Kathu- S. Joseph
3. Thoramazha – Rafeek Ahammad
4. Muttamadikkumbol – Anitha Thampi
5. Survey of India-B.M.Manoj

Recommended Text

Puthukavitha Ed by Dr.O.K.Santhosh.Madras University Publication (5 poems only)

- (a) pattambipuzhamanalil,
- (b) Malayala kavithakku oru kathu,
- (c) Muttamadikkumbol,
- (d) Thoramazha,
- (e) Survey of India

Reading List (Print and Online)

1. Aadhunika Malayala Sahitya Charithram prasthanangaliloode – Dr. K.M.George (Ed.)
2. Kairaliyute Kadha – N.Krishnapillai
3. Kavitha Sahitya Charithram – M.Leelavathi
4. Adrushyathayute Akhyanangal- Rajesh Chirapadu
5. Adhunikananthara Malayala Kavitha –C.R.Prasad
6. Pen kavitha malayalathil-Sheeba Divakaran,kerala bhasha institute.Thiruvananthapuram
7. Samakalika Malayala kavitha-M.B.Manoj,Samayam Classics. Kannoor
8. Varnnaraji Dr.M.Leelavathi



HINDI - Patra Lekhan aur Paribhashik Shabdavali

Unit I

Niji Patra Lekhan

- Niji Patra – Arth aur Bhed
- Pitaji/Mataji ke naam patra
- Mitra, Bhai aadi ke naam patra
- Paribhashik Shabdawali – 20 words

Unit II

Samajik Patra Lekhan

- Samajik Patra – Arth aur Bhed
- Aavedan Patra – Noukri, Chutti aadi
- Dak Adhikari ke naam patra
- Paribhashik shabdawali – 20 words

Unit III

Vyavasayik Patra Lekhan

- Vyavasayik Patra – Arth aur Bhed
- Prakashak ke naam patra
- Shikayathi
- Paribhashik shabdawali – 20 words

Unit IV

- Samanya Parichay
- Sarkari Patra
- Ardh-Sarkari Patra
- Gyapan, Paripatra
- Anusmarak
- Paribhashik Shabdawali – 20 words

Unit V

- Precis Writing And Applied Grammar (Ling, Vachan and Karak)

Reference Books

1. Viyavaharik Hindi, Hindi Prachar press, T.Nagar, Madras-600 017
2. Alekhan aur Tippan – Prof. Viraj
3. Alekhan - Kichlu

Related Online Contents (MOOCs, SWAYAM, NPTEL, YouTube, Websites, etc.)

1. <https://youtu.be/-kUPGG0B4tU>
2. <https://www.youtube.com/watch?v=xk14MNb1r7k>



GENERAL ENGLISH

Unit I ACTIVE LISTENING

Short Story

- 1.1 In a Grove – Akutagawa Ryunosuke Translated from Japanese by Takashi Kojima
- 1.2 The Gift of the Magi – O' Henry

Prose

- 1.3 Listening – Robin Sharma
- 1.4 Nobel Prize Acceptance Speech – Wangari Maathai

Unit II INTERPERSONAL RELATIONSHIPS

Prose

- 2.1 Telephone Conversation – Wole Soyinka
- 2.2 Of Friendship – Francis Bacon

Song on (Motivational/ Narrative)

- 2.3 Ulysses – Alfred Lord Tennyson
- 2.4 And Still I Rise – Maya Angelou

Unit III COPING WITH STRESS

Poem

- 3.1 Leisure – W.H. Davies
- 3.2 Anxiety Monster – Rhona Mc Ferran

Readers Theatre

- 3.3 The Forty Fortunes: A Tale of Iran
- 3.4 Where there is a Will – Mahesh Dattani

Unit IV Grammar

- 4.1 Phrasal Verbs & Idioms
- 4.2 Modals and Auxiliaries
- 4.3 Verb Phrases – Gerund, Participle, Infinitive

Unit V Composition/ Writing Skills

- 5.1 Official Correspondence – Leave Letter, Letter of Application, Permission Letter
- 5.2 Drafting Invitations
- 5.3 Brochures for Programmes and Events

Text Books (Latest Editions)

- 1. Wangari Maathai – Nobel Lecture. Nobel Prize Outreach AB 2023. Jul 2023.
- 2. Mahesh Dattani, Where there is a Will. Penguin, 2013.
- 3. Martin Hewings, Advanced English Grammar, Cambridge University Press, 2000
- 4. Essential English Grammar by Raymond Murphy

Web Resources

- 1. WangariMaathai – Nobel Lecture. Nobel Prize Outreach AB 2023. Mon. 17 Jul 2023.
<https://www.nobelprize.org/prizes/peace/2004/maathai/lecture/>
- 2. Telephone Conversation - Wole Soyinka https://www.k-state.edu/english/westmank/spring_00/SOYINKA.html
- 3. Anxiety Monster-RhonaMcFerran www.poetrysoup.com



BRITISH LITERATURE - II

Learning Objectives

- To help learners analyze British Literature written from the late 18th Century to the present.
- To guide them in interpreting literature as it relates to its historical, cultural, and/or political context.
- To provide them with understanding of relationships between various movements (such as Romanticism, Victorianism, Modernism, and/or Postmodernism) and the literature of the period.
- To closely examine literary works using critical perspectives.
- To help them with applying appropriate formal conventions when writing about literature.

UNIT I

Alfred Tennyson- Tithonus
 Robert Browning- My Last Duchess
 Christina Rossetti- The Goblin Market
 T. S. Eliot - The Wasteland (1 – 144 Lines)
 W. H. Auden - The Unknown Citizen
 Philip Larkin - The Whitsun Weddings

UNIT II

G. K. Chesterton - Piece of Chalk
 Charles Lamb - Dream Children
 Joseph Addison - Sir Roger at Church, Sir Roger in London
 William Hazlitt - Indian Jugglers

UNIT III

G.B. Shaw – Arms and the Man
 John Osborne - Look Back in Anger

UNIT IV

Jane Austen - Persuasion
 Charlotte Brontë - Jane Eyre

UNIT V

Arthur Conan Doyle – Hound of Baskervilles
 Agatha Christie (Graphic Novel) – Murder on the Orient Express

Text Books (Latest Editions)

1. Renard, Virginie. The Great War and Postmodern Memory: The First World War in Late 20 Th -Century British Fiction (1985-2000). Peter Lang AG, Internationaler Verlag Der Wissenschaften, 2013.
2. David Green - Winged Words – Mac Millan



References Books (Latest editions, and the style as given below must be strictly adhered to)

1. Brontë Charlotte, et al. Jane Eyre. Oxford University Press, 2019.
2. Lamb, Charles. Dream Children: A Reverie. Reed Pale Press, 1928.
3. Look Back in Anger, by John Osborne: Theatre Program, 1974, La Mama Theatre. 1974.

Web Resources

1. Makinen, Merja. "Representing Women of Violence Agatha Christie and Her Contemporary Culture." Agatha Christie, 2006, pp. 135– 157., https://doi.org/10.1057/9780230598270_6.
2. Smith, Grover. "Eliot's World before the Waste Land." The Waste Land, 2020, pp. 1–17., <https://doi.org/10.4324/9781003070627-1>

AMERICAN LITERATURE - II**Learning Objectives**

- To help learners examine the roots of American literature by focusing multiple genres—poetry, drama, stories and novel.
- To guide to explore literature that reveals and emerges from multiple perspectives such as race, gender, ethnicity, socioeconomic class and historical period.
- To create an awareness of the social, historical, literary and cultural elements of the changes in American literature.
- To help them explore distinct literary characteristics of American literature and analyze literary works of eminent American writers.
- To inculcate a rhetorical approach to the literary study of American texts and also the conceptions, generalizations, myths and beliefs about American cultural history.

UNIT I

Theodore Roethke - The Meadow Mouse.

Wallace Stevens - The Emperor of Ice Cream

Emily Dickinson - The Bird Came Down the Walk

Maya Angelou - Phenomenal Women

Chief Dan George - My Heart Soars.

UNIT II

Lorraine Hansberry – A Raisin in the Sun

Neil Simon - Barefoot in the Park

UNI III

Henry David Thoreau - Winter Animals

Ralph Waldo Emerson - The American Scholar

James Baldwin – Stranger in the Village



UNIT IV

Nathaniel Hawthorne - The House of the Seven Gables

Toni Morrison – Beloved

UNIT V

Mark Twain - The Adventures of Tom Sawyer.

Angeline Boulley - Fire keeper's Daughter

Text Books (Latest Editions)

1. Angelou, Maya. The Complete Poetry. Random House, 2015. An Anthology of American Literature - ?

References Books (Latest editions, and the style as given below must be strictly adhered to)

1. Dickinson, Emily. A Bird Came Down the Walk - Selected Bird Poems of Emily Dickinson. Read Books Ltd, 2021.
2. Gray, Richard. A Brief History of American Literature. John Wiley & Sons, 2010. Hansberry, Lorraine. A Raisin in the Sun. Modern Library, 1995.
3. Morrison, Toni. Beloved. Everyman's Library, 2006.
4. Twain, Mark. The Adventures of Tom Sawyer. The Floating Press, 2009.

Web Resources

1. Cramer, Jeffrey S., editor. "Thoreau Describes His Contemporaries." The Quotable Thoreau, Princeton University Press, 2011, pp. 430–38, <http://dx.doi.org/10.1515/9781400838004.430>.
2. Hawthorne, Nathaniel. "The Revelation of the Scarlet Letter." The Scarlet Letter, Oxford University Press, 2008, <http://dx.doi.org/10.1093/owc/9780199537808.003.0025>.

LITERARY GENRES AND TERMS (ELECTIVE)**Learning Objectives**

- To help students apply literary terminology to fiction, drama, and poetry.
- Help them recognize the main elements of different literary genres and assess their significance
- To help them analyze different genres of literature, particularly short stories, novels, drama, and poetry
- To enable them to Identify a literary text's main themes and make reasonable assertions about their meaning
- To guide them to re-narrate the plot of a short story, both orally and in writing.

UNIT I**Literary Theory and Terms:**

The Basics Classicism (62), Comparative Literature (70), Eco Criticism (109), Existentialism (129), Expressionism (130), Feminist Criticism (138), Marxist Criticism (214), Modernism (230), Naturalism (239), New Criticism (244), Neo formalism (245), Postcolonial Literature (285), Postmodernism (288), Psychoanalytic Criticism (296)



UNIT II**Types of Prose Text-semiotics: The Basics**

Fictional Prose: Novel (252), Novella (254), Short Story (MHA),

Screen Plays (326)

Non-fictional Prose: Memoirs (218), Autobiographies (30),

Biographies (40), Epistles (122)

Heroic Prose: Legends (199), Fables (133)

Prose Poem (294)

UNIT III**Terms for Interpreting Authorial Voice- Terms for Interpreting**

Interpreting Authorial Voice: Characterization (56), Dialogue (96),

Point of View (283), Tone (360), Symbolism (351), Narratives (first person (141), second person (359), unreliable narrator (373)), Apology (22), Irony (187), Satire (322), Stream of Consciousness (343), Interpreting Characters: Antagonist (16), Anti-hero (17), Archetype (24), Epithet (123), Protagonist (294)

UNIT IV**Terms for Interpreting Word Choice, Dialogue, and Speech- Terms for Interpreting Plot**

1. Terms for Interpreting Word choice: Denotation (91), Connotation (73), Colloquialism (66), Diction (96), Syntax (354)
2. Terms for Interpreting dialogues: Rising action (MHA), Falling action (MHA), Persuasion (MHA), Point of view (283), Pun (298)
3. Speech terms for interpreting plot: Flashback / Analepsis (13), Climax (64), Exposition (129), Setting, Motif (233)

UNIT V**Terms for Interpreting Layers of Meaning -Cultural Theory: The Key Concepts**

Culture, Avant Garde (33), Intertextuality (184), Deconstruction (88), Discourse (99), Cultural Materialism (81), Transnationalism, Diaspora, Hybridity, Hegemony, Melting Pot, Alienation, Identity Crisis, Ethnicity

Text Books (Latest Editions)

1. Baldick, Chris. Oxford Dictionary of Literary Terms. Oxford: Oxford University Press, 2001.
2. Mikics, David. A New Handbook of Literary Terms. New Haven: Yale University Press, 2007. Print.

References Books(Latest editions, and the style as given below must be strictly adhered to)

1. Taaffe, James G. A Student's Guide to Literary Terms. Cleveland: The World Publishing Company, 1967. Print.

Web Resources

1. 1821-literary-terms.pdf (cgc.edu)



ENGLISH FOR CAREER (SEC-IV)

Learning Objectives

- To help students gain knowledge about the job search, application, and interview process
- Help them to explore their global career path, while building vocabulary and improving language skills to achieve professional goals.
- Help them with strategies for identifying the jobs that match their interests and skills
- Help them to understand the job-seekers language for meeting new people, making small talk, and describing
- To enable learners to describe themselves and their experiences in a résumé

UNIT I

Definition of English Language - Characteristic Features – English in the past, present and the future, Purposes of English Language – Importance of Essential Grammar (Concord, Articles, Preposition and Tenses) and Essentials of English Speeches

UNIT II

Verbal Communication: The Written Channel (writing a Resume and C V, writing a formal letter of application, writing for a specific audience)

UNIT III

Major Roles played by English Language in Education and various career choices – Group Discussion, Interview Skills, searching for a job offering web site and screening them, Vocabulary, and Para linguistics.

UNIT IV

English language as an identity to popular culture – Advertisements, Short films, Documentary, What's App, twitter, and LinkedIn

UNIT V

The major developments happening in the contemporary world by using English language – email, blog, websites, media, content writing and Vlog.

Text Books (Latest Editions)

1. English for JOBSEEKERS, Language and Soft Skills for the Aspiring: Foundation Books, Cambridge University Press India Pvt. Ltd., 2013. Print
2. Methods of Teaching English, N Krishnaswamy and Lalitha Krishnaswamy, Macmillan, 2011, Print

References Books (Latest editions, and the style as given below must be strictly adhered to)

1. Bose, D.M. "J.C. Bose." Dr. D. M. Bose Centenary Celebration Commemoration Volume 1885- 1985. Kolkata: Bose Institute, 1995. Print



2. Speaking and Writing for Effective Business Communication, Francis Soundararaj, Macmillan, 2007, Print
3. Communication Skills, Sanjay Kumar, Pushpalatha. Oxford University Press, 2013. Print
4. An Outline History of the English Language, F T Wood, Macmillan, 1978

Web Resources

1. https://www.researchgate.net/publication/344172814_English_For_Career_Development?enrichId=rgreq-f03b840d2a167e34689a3348ec32dc12-XXX&enrichSource=Y292ZXJQYWdlOzM0NDE3MjgxNDtBUzo5MzM3Ng3MTc0Mzc5NTdAMTU5OTY0MTYwMzU2NQ%3D%3D&el=1_x_2&_esc=publicationCoverPdf

ENVIRONMENTAL STUDIES

Course Objectives:

The main objectives of this course are:

- Enable the students to be aware of our natural resources, ecosystems and their linkages to society, livelihood, environment and conservation.

Unit I

Multidisciplinary Nature of Environmental Studies and Natural Resources:

Concept of Renewable and non-renewable resource, Natural resources and associated problems: Forest resources: Deforestation, Timber extraction, mining, dams and their effects. Water resources: Over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Land resources: Land degradation, man induced landslides, soil erosion and desertification.

UNIT II

Ecosystem: Concept of an Ecosystem, Structure and Functions of Ecosystem, Energy flow in the Ecosystem; Ecological Succession, Food Chains, Food webs and Ecological Pyramids, Characteristic Features of the following Ecosystem: Forest Ecosystem, Grassland Ecosystem and Desert Ecosystem, Aquatic Ecosystem (Ponds, Streams, Lakes, Rivers and Ocean Estuaries)

UNIT III

Biodiversity and its Conservation: Definition, levels and values of biodiversity; Threats to biodiversity- habitat loss, poaching of wildlife, man-wildlife conflicts, IUCN categories of threat; Terrestrial and marine hotspots of biodiversity in India; Conservation of Biodiversity - In-situ and Ex-situ conservation; Conservation schemes :Gir lion sanctuary project, Project tiger, Project elephant, Conservation of sea turtles in India. Ecotourism



UNIT IV

Environment Pollution: Types, causes, effects, and control - Air, Water, Soil and Noise pollution. Nuclear hazards and human health risks. Solid waste management: Control measure of urban and industrial waste. Climate change global warming, ozone layer depletion, acid rain, and impacts on human communities and agriculture

UNIT V

Social Issues and the Environment: Sustainable Development, Water Conservation, Resettlement and rehabilitation of people. Disaster Management: Floods, earthquake, cyclone and landslides. Consumerism and waste products; Environment Protection Act; Air and water (Prevention and control of Pollution) Act; Wild life protection Act; Forest conservation Act; Environmental movements (Chipko, Silent valley, Bishnois of Rajasthan). Environmental ethics. Environmental communication and public awareness.

Reading list

1. Erach Bharucha, 2021, Textbook of Environmental Studies for Undergraduate Courses, Third Edition, Orient blackswan Pvt. Ltd., Hyderabad.
2. V.K. Ahluwalia, Environmental Studies (Second Edition), Ane books India, T-Nagar, Chennai.
3. Y.K. Singh, 2006, Environmental science, New Age International (P) Ltd., Publishers, New Delhi.
4. S. P. Misra, 2023, Essential Environmental Studies, 4th Edn, Ane Books Pvt. Ltd., New Delhi.
5. G.S. Vijayalakshmi, A.G.Murugesan and N.Sukumaran, 2006, Basics of Environmental Science, Manonmaniam Sundaranar University Publications, Tirunelveli.

Recommended texts

1. N.Arumugam and V. Kumaresan, 2014, Environmental studies, 4th edition, Saras Publication, Nagercoil, TamilNadu.
2. M.Basu, and S. Xavier, 2016, Fundamentals of Environmental Studies, Cambridge University Press.
3. A.K. Mitra and R. Chakraborty, 2016, Introduction to Environmental Studies, Book Syndicate.
4. J.S. Singh, S.P.Singh, and S.R. Gupta, 2014, Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.

