SYLLABUS

MANONMANIAM SUNDARANAR UNIVERISTY, TIRUNELVELI-12

UG COURSES – AFFILIATED COLLEGES

B.Sc COMPUTER SCIENCE

(Choice Based Credit System) (with effect from the academic year 2021-2022 onwards)

Semester-I							
Part	Subject Status	Subject Title	Subject Code	Credit			
Ι	Language	Tamil/Other Language	C1TL11 / C1MY51	4			
II	Language	English	C2EN11	4			
III	Core	Programming in C	CMCS11	4			
III	Major Practical - I	Programming in C	CMCSP1	2			
III	Allied - I	Discrete Mathematics	CACS11	3			
III	Core	Professional English For Physical Sciences-I	CPPS11	4			
IV	Common	Environmental Studies	CEVS11	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 **I 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	0	10	Outstanding
2	80-89	A+	9	Excellent
3	70-79	А	8	Very Good
4	60-69	B+	7	Good
5	50-59	В	6	Above Average
6	40-49	С	5	Pass
7	0-39	RA	-	Reappear
8	0	AA	-	Absent

<u>Cumulative Grade Point Average (CGPA)</u>

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

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

> Classification

- a) First Class with Distinction : CGPA $\ge 7.5^*$
- b) First Class

- : CGPA $\geq 7.5^*$: CGPA ≥ 6.0
- $COPA \ge 0.0$
- c) Second Class : $CGPA \ge 5.0 \text{ and } < 6.0$ d) Third Class : $CGPA \le 5.0$



முதலாம் பருவம்

பாடத்திட்டப்பதிப்பு -2021-2022

பகுதி – ஒன்று – பொதுத்தமிழ் - முதல் தாள்

Unit:1

செய்யுள்

தமிழ்த்தாய் வாழ்த்து முதல் நாட்டுப்புறப்பாடல்கள் வரை பல்கலைக்கழக வெளியிடு, அனுசித்ரா பப்ளிகேஷன்ஸ், சென்னை-33. தொலைபேசிஎண் : 044-24743719, Email : <u>anuchitrapublications@gmail.com</u>

Unit:2

இலக்கணம் : எழுத்து இலக்கணம்

- 1. எழுத்தின் விளக்கம்
- 2. எழுத்தின் வகைகள் முதல் எழுத்துக்கள், சார்பு எழுத்துக்கள்
- 3. வினா எழுத்துக்கள், சுட்டெழுத்துக்கள்
- 4. வல்லினம் மிகும் இடங்கள், வல்லினம் மிகா இடங்கள்
- 5. ஒலிப்பு மாறுபாடுகளும் பொருள் வேறுபாடுகளும

Unit:3

உரைநடை

இலக்கியச்சாரல் - தொகுப்பாசிரியா் முனைவா் ச.அருள்மணி பிரிசாட் பப்ளிகேஷன்ஸ் சென்னை – 3

Unit:4

சிறுகதை

நவரத்தினக்கதைகள் - தொகுப்பாசிரியர் முனைவர் சு.நயினார் அறிவுப்பதிப்பகம்(பி)லிட்., சென்னை —14,தொலைபேசி எண் : 044-28482441

Unit:5

இலக்கிய வரலாறு

- 1. புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்
- 2. சிறுகதையின் தோற்றமும் வளர்ச்சியும்
- 3. நாவலின் தோற்றமும் வளர்ச்சியும்
- 4. நாடகத்தின் தோற்றமும் வளர்ச்சியும்
- 5. நாட்டுப்புறப்பாடல்களின் தோற்றமும் வளர்ச்சியும்



PART-1 MALAYALAM

For B.Com., BCA, B.Sc. Computer Science, B.Sc. Electronics, BBA and other Job Oriented Courses, Part-1 Language will be in the first two semesters only. In that case they are supposed to study Paper-III & Paper-IV only. Other B.A. & B.Sc. Degree Course Students should study all four papers. Each paper shall divide into five units having one or two poems / prose works / parts / chapters etc for detailed study. In addition to these lessons, the teachers should brief about the Origin and History of the Literary Movements, Disciplines, Theories of Classical and Modern Theatre, Print & Visual Media.

The present Board of Studies in Malayalam is strictly adhered to the directions put forwarded by UGC & TANSCHE Govt. of Tamilnadu. Presently the language learning is closely associated with Print and Visual Media. The learner must be aware about the practicality of the language in the present scenario. That is why in the last semester media literature and art of advertising is included. The new curriculum is designed on par with the Part-1 Malayalam Syllabus of other major Universities in Kerala. The Course Structure is 75% equal in compared with other Universities

OBJECTIVE OF THE STUDY

The study of early days of Malayalam poetry, origin from Pattu movement to contemporary poetry should be introduced. The aim is to develop general knowledge about Malayalam poetry. To Develop ability to appreciate poetry and critical analysis. By understanding the history of poetry and its growth over time, one can understand the various levels associated with poetical studies and criticism.





PART I MALAYALAM

THIRD SEMESTER

PAPER - III A1MY31 - ദൃശ്യകലാസാഹിത്യം (Drusyakalasahithyam)- Classical and Modern Theatre / Cinema Literature

OBJECTIVE OF THE STUDY

In the present scenario Visual arts especially, Cinema is influenced a lot. It gives lot of job opportunity also. Inclusion of Drama and Cinema in this semester will create interest among the students to opt for future endevours. It helps to know more about the visual arts sensitivities and enable them to appreciate the art forms very well. To achieve these it is necessary to create a general awareness among the students to Visual Arts and their literary Genres. We need to convince the students about the specific factors of art forms that are changing from time to time and their relevance. To enable them to understand the general nature of a Film Script, Screen Play and the transition of a story/short-story/Novel/an idea into a film.

UNIT - 1- Thullal- A Satirical Classical Visual Art Form

തുള്ളൽ

തുള്ളൽപ്രസ്ഥാനം - ചരിത്രം - സാമൂഹ്യമാറ്റങ്ങൾ - ആക്ഷേപഹാസ്യം - ജനകീയത - പ്രധാനപ്പെട്ട തുള്ളലുകൾ - ഇവയുടെ പരിചയം

FOR DETAILED STUDY

 കഞ്ചൻ നമ്പ്യാർ - ഘോഷയാത്ര (ദൈ്യതേരസുഖരസികന്മാരായ്... ...പണ്ടേക്കാൾ പല വിക്രമപൗരുഷമുണ്ടിപ്പോൾ മമ കൗരവവീരാ)

UNIT - 2-KADHAKALI - A Classical Visual Art Form

കഥകളി

ചരിത്രം - കാക്കാരിശ്ശി നാടകം - പൊറാട്ട് നാടകം - ചവിട്ടു നാടകം - തെയ്യം -എന്നിവയെ പരിചയപ്പെടുത്തുക - സംസ്കാരം - സാമൃഹ്യപ്രാധാന്യം - പുതിയ കാലഞ്ഞ മാറ്റങ്ങൾ - സാങ്കേതിക കാര്യങ്ങൾ - അഭിനയരീതികൾ - വേഷം

FOR DETAILED STUDY

2. നളചരിതം ആട്ടക്കഥ നാലാം ദിവസം (ഏ. ആർ. രാജരാജവർമ്മയുടെ കാന്താരതാരകം) ഉണ്ണായിവാരിയർ ആദ്യത്തെ ആറ്റ രംഗങ്ങൾ

Nesamony Memorial Christian College, Marthandam



UNIT - 3- Translation of a Sanskrit Drama

നാടകം (സംസ്കര നാടക വിവത്തേനം) നാടകവുമായി ബന്ധപ്പെട്ട വിവത്തേനചരിത്രം - ആദ്യകാലത്തെ വിവർത്തനങ്ങളുടെ പ്രത്യേകതകൾ - സംസ്കരനാടകവുമായി ബന്ധപ്പെട്ട സങ്കേരങ്ങൾ -നാടകാസ്ഥാദനവുമായി ബന്ധപ്പെട്ട ചുറ്റപ്പാടുകൾ - സാമുഹ്യാവസ്ഥ - പ്രാധാന്യം

FOR DETAILED STUDY

3. മലയാളശാകന്തളം - നാലാമങ്കം - വിവർത്തനം ഏ. ആർ. രാജരാജവർമ്മ

UNIT - 4- A Modern Drama in Malayalam

നാടകം (മലയാള നാടകം)

മലയാളനാടകചരിത്രം - പ്രധാനപ്പെട്ട നാടകാചാര്യന്മാർ - ആദ്യകാലത്തെ പ്രവർത്തനങ്ങൾ - അരങ്ങും നാടകസാഹിത്യവും -പ്രധാനപ്പെട്ട നാടകങ്ങൾ - സാമൃഹ്യ മാറ്റങ്ങൾ - രാഷ്ട്രീയചരിത്രം - പ്രവർത്തനങ്ങൾ - നാടകത്തിന്റെ സമകാലികാവസ്ഥ -റേഡിയോ തുടങ്ങിയ മാധ്യമങ്ങൾ - പ്രൊഫഷണൽ നാടകങ്ങൾ - അമേചാർ നാടകങ്ങൾ

FOR DETAILED STUDY

4. സി. എൻ. ശ്രീകണ്ഠൻനായർ - കാഞ്ചനസീത ആദ്യത്തെ രണ്ട് രംഗം

UNIT - 5- Cinema

സിനിമ

സിനിമയുടെ ചരിത്രം - ആദ്യകാലം - ഓരോ ഘട്ടത്തിലെയും വികാസം - സിനിമാ പഠനം - സിദ്ധാന്തങ്ങൾ - മലയാള സിനിമ - ആദ്യകാലത്തെ സിനിമ - ശബൂചിത്രം -നിശ്ലബൂചിത്രം - ദൃശ്യഭാഷ - സംവിധാനം - തിരക്കഥയിൽ നിന്ന് സിനിമയിലേക്കുള്ള വികാസം

FOR DETAILED STUDY

5. അടൂർ ഗോപാലകൃഷ്ണൻ - മതിലുകൾ

REFERENCE BOOKS

കൈരളിയുടെ കഥ - പ്രൊഫ. എൻ. കൃഷ്ണപിള്ള നളചരിതം ആട്ടക്കഥ - കാന്താരതാരകം - ഏ. ആർ. രാജരാജവർമ്മ ഉയരുന്ന യവനിക - സി. ജെ. തോമസ് മലയാളനാടകസാഹിത്യചരിത്രം - ഡോ. വയലാ വാസദേവൻ പിള്ള മലയാളനാടകസാഹിത്യചരിത്രം - ജി. ശങ്കരപ്പിള്ള



```
സിനിമയുടെ വ്യാകരണം - ഡോ. ടി. ജിതേഷ്
തിരക്കഥാരചന - കലയും സിദ്ധാന്തവും - ജോസ്. കെ. മാനുവൽ
കഥയും തിരക്കഥയും - ആർ. വി. എം. ദിവാകരൻ
നാടോടി വിജ്ഞാനീയം - എം. വി. വിഷ്ണനമൂതിരി
മലയാള സംഗീതനാടകചരിത്രം - കെ. ശ്രീകമാർ
ചവിട്ടുന്നാടകം - സെബീനാറാഫി
കേരളത്തിലെ നാടോടി നാടകങ്ങൾ - ഡോ. എസ്. കെ. നായർ
ഫോൿലോർ - തഘവൻ പയ്യനാട്
നാട്ടരങ്ങ് - ജി. ഭാർഗ്ഗവൻ പിള്ള
കഞ്ചൻനമ്പ്യാരും അദ്ദേഹത്തിന്റെ കൃതികളും - വി. എസ്. ശർമ്മ
```



PART II ENGLISH

Unit I

- 1. Listening and Speaking
 - a. Introducing self and others
 - b. Listening for specific information
 - c. Pronunciation (without phonetic symbols)
 - i. Essentials of pronunciation
 - ii. American and British
 - iii. pronunciation
- 2. Reading and Writing
 - a. Reading short articles newspaper reports / fact based articles
 - I. Skimming and scanning
 - II. Diction and tone
 - III. Identifying topic sentences
 - b. Reading aloud: Reading an article/report
 - c. Journal (Diary) Writing
- 3. Study Skills 1
 - a. Using dictionaries, encyclopaedias, Thesaurus
- 4. Grammar in Context:
 - Naming and Describing
 - Nouns & Pronouns
 - Adjectives

Unit II

- 1. Listening and Speaking
 - a. Listening with a Purpose
 - b. Effective Listening
 - c. Tonal Variation
 - d. Listening for Information
 - e. Asking for Information
 - f. Giving Information
- 2. Reading and Writing
 - 1. a. Strategies of Reading:

Skimming and Scanning

- b. Types of Reading :
 - Extensive and Intensive Reading
- c. Reading a prose passage
- d. Reading a poem
- e. Reading a short story
- 2. Paragraphs: Structure and Types
 - a. What is a Paragraph?



- b. Paragraph structure
- c. Topic Sentence
- d. Unity
- e. Coherence
- f. Connections between Ideas: Using Transitional words and expressions
- g. Types of Paragraphs
- 3. Study Skills II:

Using the Internet as a Resource

- a. Online search
- b. Know the keyword
- c. Refine your search
- d. Guidelines for using the Resources
- e. e-learning resources of Government of India
- f. Terms to know
- 4. Grammar in Context

Involving Action-I

- a. Verbs
- b. Concord

Unit III

- 1. Listening and Speaking
 - a. Giving and following instructions
 - b. Asking for and giving directions
 - c. Continuing discussions with connecting ideas
- 2. Reading and writing
 - a. Reading feature articles (from newspapers and magazines)
 - b. Reading to identify point of view and perspective (opinion pieces, editorials etc.)
 - c. Descriptive writing writing a short descriptive essay of two to three paragraphs.
- 3. Grammar in Context:
 - Involving Action II
 - a. Verbals Gerund, Participle, Infinitive
 - b. Modals

Unit IV

- 1. Listening and Speaking
 - a. Giving and responding to opinions
- 2. Reading and writing
 - a. Note taking
 - b. Narrative writing writing narrative essays of two to three paragraphs
- 3. Grammar in Context:

Tense



- a. Present
- b. Past
- c. Future

Unit V

- 1. Listening and Speaking
 - a. Participating in a Group Discussion
- 2. Reading and writing
 - a. Reading diagrammatic information interpretations maps, graphs and pie charts
 - b. Writing short essays using the language of comparison and contrast
- 3. Grammar in Context:

Voice (showing the relationship between Tense and Voice)



Core-1 Programming in C

Objective:

To obtain knowledge about the structure of the programming language C and to develop the program writing and logical thinking skill.

Unit – I: INTRODUCTION

C Declarations:- Character Set – C tokens – Keywords and Identifiers – Identifiers – Constants – Variables – Data types – Declaration of Variables – Declaration of Storage Class – Assigning Values to Variables – Defining Symbolic Constants – Declaring Variable as Constant. Operators and Expressions:- Introduction – Arithmetic Operators – Relational Operators – Logical Operators – Assignment Operators– Increment and Decrement Operators – Conditional Operator – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Expressions. Managing Input and Output Operations:getchar() – putchar() – scanf() – printf().

Unit – II: CONTROL STRUCTURES

Decision Making and Branching:- Decision Making with IF Statement – Simple IF statement – The IF...Else Statement – Nesting of IF...Else Statements – The ELSE IF ladder – The Switch Statement – The ?: Operator – The GOTO statement. Decision Making and Looping:- The WHILE Statement – The DO Statement – The FOR statement.

Unit – III:

ARRAYS

One-dimensional arrays – Declaration of One-dimensional arrays – Initialization of One- dimensional arrays - Two-dimensional arrays – Initialization of Two-dimensional arrays – Multi- dimensional arrays. Character Arrays and Strings:-Declaring and Initializing String Variables – Reading Strings from Terminal – Writing Strings to Screen – String Handling Functions.



Unit – IV: FUNCTIONS

User-Defined functions:- Need for User-defined functions – Definition of functions – Return Values and their Types – Function Calls – Function Declaration – Category of functions – No Arguments and No return values – Arguments but No return Values – Arguments with return values – No arguments but a return a value – Recursion – Passing Arrays to functions – Passing Strings to functions – The Scope, Visibility and lifetime of a variables. Structures and Unions:- Defining a Structure – Declaring Structure Variables – Accessing Structure Members – Structure Initialization – Arrays of structures –Unions.

Unit – V:

POINTERS AND FILES

Pointers:- Understanding pointers – Accessing the Address of a Variable – Declaring Pointer Variables – Accessing a variable through its pointer – Pointer Expressions –Pointers as function arguments. File Management in C:- Defining and Opening a file – Closing a File – Input/output Operations on files – Error Handling during I/O Operations.

Text Book :

Programming in ANSI C – 6th Edition by E Balagurusamy – Tata McGraw Hill Publishing Company Limited.

Reference Books:

- Computer System and Programming in C by Manish Varhney, Naha Singh CBS Publishers and Distributors Pvt Ltd.
- 2. Introduction to Computer Science, ITL Education Solutions Limited, Second Edition, Pearson Education
- 3. Computer Basics and C Programming by V. Rajaraman PHI Learning Private Limited
- 4. Programming with C, Third Edition, Byron S Gottfried, Tata McGraw Hill Education Private Limited.
- 5. The Art of C Programming | Robin Jones | Springer https://www.springer.com > book 1. ISBN 978-1-4613-8685-8 · Digitally watermarked, DRM-free
- 6. C Programming Tutorial PDF https://www.unf.edu > ~wkloster > ppts > cprogra..



Major Practical -1

Major Practical – I Programming in C

Objective:

• To develop skills in implementing algorithms through the programming Language C and to explore the features of C by applying sample problems.

Each exercise should be completed within two hours.

It is compulsory to complete all the exercises given in the list in the stipulated time.

- 1. To find all possible roots of a quadratic equation using if statement
- 2. Program to check vowel or consonant using switch case statement
- 3. Evaluate Sine series using while loop

Sin (x) =
$$x - x^3 / 3! + x^5 / 5! - \dots x^n / n$$

- 4. Sort a list of numbers in ascending order
- 5. Search an element in an array
- 6. Reverse a number
- 7. Check the given string is palindrome or not
- 8. Find the binomial coefficient (nCr) value using recursion
- 9. Multiply two matrices (check for compatibility)
- 10. Transpose of a matrix
- 11. Find the sum of 'n' numbers by making function call
- 12. Alphabetical sorting (passing array as argument to function)
- 13. Exchange values using pointers and function
- 14. Prepare the student details using structure
- 15. Prepare mark sheet using file



PROFESSIONAL ENGLISH FOR PHYSICAL SCIENCES

OBJECTIVES:

- To develop the language skills of students by offering adequate practice in professional contexts.
- To enhance the lexical, grammatical and socio-linguistic and communicative competence of first year physical sciences students
- To focus on developing students' knowledge of domain specific registers and the required language skills.
- To develop strategic competence that will help in efficient communication
- To sharpen students' critical thinking skills and make students culturally aware of the target situation.

LEARNING OUTCOMES:

- Recognise their own ability to improve their own competence in using the language
- Use language for speaking with confidence in an intelligible and acceptable manner
- Understand the importance of reading for life
- Read independently unfamiliar texts with comprehension
- Understand the importance of writing in academic life
- Write simple sentences without committing error of spelling or grammar

(Outcomes based on guidelines in UGC LOCF – Generic Elective)

NB: All four skills are taught based on texts/passages.

UNIT 1: COMMUNICATION

Listening: Listening to audio text and answering questions

Listening to Instructions

Speaking: Pair work and small group work.
Reading: Comprehension passages –Differentiate between facts and opinion
Writing: Developing a story with pictures.
Vocabulary: Register specific - Incorporated into the LSRW tasks
UNIT 2: DESCRIPTION
Listening: Listening to process description.-Drawing a flow chart.
Speaking: Role play (formal context)
Reading: Skimming/Scanning
Reading passages on products, equipment and gadgets.

Writing: Process Description –Compare and Contrast

Paragraph-Sentence Definition and Extended definition
Free Writing.

Vocabulary: Register specific -Incorporated into the LSRW tasks.



UNIT 3: NEGOTIATION STRATEGIES

 Listening: Listening to interviews of specialists / Inventors in fields (Subject specific)
 Speaking: Brainstorming. (Mind mapping). Small group discussions (Subject- Specific)
 Reading: Longer Reading text.
 Writing: Essay Writing (250 words)
 Vocabulary: Register specific - Incorporated into the LSRW tasks

UNIT 4: PRESENTATION SKILLS

Listening: Listening to lectures. Speaking: Short talks. Reading: Reading Comprehension passages Writing: Writing Recommendations Interpreting Visuals inputs Vocabulary: Register specific - Incorporated into the LSRW tasks

UNIT 5: CRITICAL THINKING SKILLS

 Listening: Listening comprehension- Listening for information.
 Speaking: Making presentations (with PPT- practice).
 Reading: Comprehension passages –Note making. Comprehension: Motivational article on Professional Competence, Professional Ethics and Life Skills)
 Writing: Problem and Solution essay– Creative writing –Summary writing
 Vocabulary: Register specific - Incorporated into the LSRW tasks



Discrete Mathematics

Objective:

To apply basic concepts for clear understanding of mathematical principles and to solve practical problems.

Unit – I:

RELATIONS

Introduction to Relations – Binary relation – Classification of Relations – Composition of Relations – Inverse of Relation – Closure operation on Relations – Matrix representation of Relation - digraphs.

Unit – II:

FUNCTIONS

Introduction to Functions – Addition and Multiplication of Functions - Classifications of Functions – Composition of Function – Inverse Function.

Unit – III:

MATHEMATICAL LOGIC

Introduction – Statement (Propositions) – Laws of Formal Logic –Basic Set of Logical operators/operations - Propositions and Truth Tables – Algebra Propositions - Tautologies and Contradictions – Logical Equivalence – Logical Implication – Normal Forms.

Unit – IV:

MATRIX ALGEBRA

Introduction – Definition of a Matrix - Types of Matrices – Operations on Matrices – Related Matrices – Transpose of a Matrix – Symmetric and Skewsymmetric Matrices – Complex Matrix – Conjugate of a Matrix – Determinant of a Matrix – Typical Square Matrices – Adjoint and Inverse of a Matrix – Singular and Non-singular Matrices – Adjoint of a Square Matrix – Properties of Adjoint of a Matrix – Properties of Inverse of a Matrix.

Unit – V:

GRAPH

Introduction – Graph and Basic Terminologies – Types of Graphs – Sub Graph and Isomorphic Graph – Operations on Graphs – Representation of Graph.

Text Book:



1) DISCRETE MATHEMATICS, Swapan Kumar Chakraborty and Bikash Kanti Sarkar, OXFORD University Press.

Reference Books:

- 1. DISCRETE MATHEMATICS, Third Edition, Seymour Lipschutz and Marc Lars Lipson, Tata McGraw Hill Education Private Limited.
- 2. Discrete Mathematical Structures with Aplications to Computer Science by J.P.Tremblay, R.Manohar TMH edition
- 3. https://www.tutorialspoint.com > discrete_mathematics



ENVIRONMENTAL STUDIES

PART IV-COMPULSORY PAPER

UNIT I:

THE MULTIDISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES

Definition, scope and importance Natural resources and associated problems:

- a) Forest resources: Use and over-exploitation, deforestation, timber extraction, dams and their effects on forests and tribal people.
- b) Water resources: Use and over-utilization of surface and ground water, floods, drought, dams-benefits and problems, water conservation and watershed management.
- c) Mineral resources: Use and exploitation, environmental effects.
- d) Food resources: World food problems, changes, effects of modern agriculture, fertilizer-pesticide problems.
- e) Energy resources: Growing energy needs, renewables and non-renewable energy sources, alternate energy sources.
- f) Land resources: Land as a resource, land degradation, man-induced landslides, soil erosion and desertification.
- g) Role of an individual in conservation of natural resources.
- h) Equitable use of resources for sustainable lifestyles.

UNIT II:

ECOSYSTEMS

- a) Forest Ecosystem
- b) Grassland Ecosystem
- c) Desert ecosystem
- Aquatic Ecosystem (Ponds rivers, oceans, estuaries)
 Food Chains, Food Webs and Ecological Pyramids Energy flow in the ecosystem
 Ecological succession

UNIT III :

BIODIVERSITY AND ITS CONSERVATION

Introduction Definition: Genetic, species and ecosystem diversity. Bio geographical classification of India Values of Biodiversity Biodiversity at global, national and local levels India as a mega-diversity nation Hot-Spots of biodiversity Threats to biodiversity Endangered and endemic species of India Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

UNIT IV: ENVIRONMENTAL POLLUTION

Definition- Causes, effects and control measures of:-

a) Air Pollution
b) Water Pollution
c) Soil Pollution
d) Marine Pollution
e) Noise Pollution.
f) Thermal Pollution
Solid Waste Management
Disaster Management: Floods, earthquake, cyclone and landslides.

UNI TV:

SOCIAL ISSUES AND THE ENVIRONMENT

Climatic change, global warming, acid rain, ozone depletion. Wasteland reclamation Consumerism and Waste products, use and through plastics Environment Protection Act Air (Prevention and Control of Pollution Act Water (Prevention and Control of Pollution) Act Wildlife Protection Act Forest Conservation Act Population Explosion — Family Welfare Programme Human Rights

REFERENCES:

- Vijayalakshmi, G. S.|, A. G. Murugesan and N. Sukumaran.2006. Basics of Environmental Science, Manonmaniam Sundaranar University Publications, Tirunelveli, pp.160
- 2. Agarwal. K. C.2001.Environmental Biology, Nidi Publications Limited, Bikaner.
- 3. A.K. De.1999. Environmental Chemistry, Wiley Eastern Limited, India.
- 4. Jadhav, H. and Bhosale, V.M. 1995. Environmental Protection and Laws, Himalaya Publishing House, Delhi. pp284.
- 5. Odum, E.P.1971. Fundamentals of Ecology, W.B.Saunders Co., USA.pp.574.

