VISHNU INSTITUTE OF TECHNOLOGY:: BHIMAVARAM
(Autonomous)

Approved by AICTE, Accredited by NAAC , NBA-A^{++}& Affiliated to JNTUK, Kakinada

Department of Basic Science
Computer Science & Business Systems (CS&BS)
Syllabus: I B.Tech-I Semester
(R 20 Regulations)

Academic Year 2020-21

Course Title: Discrete Mathematics

L	T	P	C
3	0	0	3

Course Objectives: Students are expected to

1. check the validity of arguments by using basic connective and valid rules of inference.
2. observe various properties of sets and relations.
3. impart knowledge on Boolean algebra and their properties.
4. know different algebraic structures and their properties and understand different counting Techniques
5. identify different graphs, isomorphism of graphs, paths, cycles and circuit

Unit-I: Logic:

Propositional calculus - propositions and connectives, syntax; Semantics – truthassignments and truth tables, validity and satisfiability, tautology; Adequate set of connectives; Equivalence and normal forms.

Unit-II: **Abstract Algebra:**

Set, relations and their properties, binary operations, algebraic system, semi group, monoid, groups and their properties, simple examples, ring – definition and example, field – definition and example.

Unit-III: Boolean algebra:

Introduction of Boolean algebra, truth table, basic logic gate, basic postulates of Boolean algebra, principle of duality, canonical form, Karnaugh map.

Unit-IV: Combinatorics:

Basic counting, balls and bins problems, generating functions, recurrence relations, Methods of solving recurrence relations, pigeonhole principle, principle of inclusion-exclusion and related problems.

Unit-V: Graph Theory:

Graphs and digraphs, complement, isomorphism, connectedness and reachability, adjacency matrix, Eulerian paths and circuits in graphs and digraphs, Hamiltonian paths and circuits in graphs.

Trees:

Trees and their properties; Planargraphs, Euler's formula, dual of a planer graph, chromatic number, Spanning Trees, Algorithms for Spanning Trees (Problems Only and Theorems without Proofs).

Text Books:

1. *Topics in Algebra,* I. N. Herstein, John Wiley and Sons.
2. *Digital Logic & Computer Design,* M. Morris Mano, Pearson.
3. *Elements of Discrete Mathematics,* (Second Edition) C. L. LiuMcGraw Hill, New Delhi.
4. *Graph Theory with Applications,* J. A. Bondy and U. S. R. Murty, Macmillan Press, London.
5. *Mathematical Logic for Computer Science,*L. Zhongwan, World Scientific, Singapore.

Reference Books:

1. *Introduction to linear algebra.* Gilbert Strang.
2. *Introductory Combinatorics,* R. A. Brualdi, North-Holland, New York.
3. *Graph Theory with Applications to Engineering and Computer Science,* N. Deo, Prentice Hall, Englewood Cliffs.
4. *Introduction to Mathematical Logic,*(Second Edition), E. Mendelsohn, Van-Nostrand, London.

Course Outcomes:

After completion of the course, the student will be able to

1. translate the arguments using propositions and predicates to verify their validity.
2. make use of sets & relations in different functioning proceduresand illustrate the properties of groups, rings, fields
3. utilize Boolean expressions and their simplifications
4. solve different counting problems and recurrence relations
5. apply graph theory concepts to modeling problems in Computer Science using graphs .Apply graph theory concepts to modelling problems in Computer Science using trees

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Department of Basic Science
Computer Science & Business Systems(CS&BS)
Syllabus: I B.Tech-ISemester
(R 20 Regulations)

Course Title: Statistics, Probability and Calculus

L	T	P	C
3	0	0	3

Course Objectives:

1. familiarize the students with the foundations of probability and statistical methods
2. use the probability concepts and statistical methods in various applications in engineering
3. impart the knowledge on basic concepts of differential & integral Calculus

Unit-I: Introduction to Statistics:

Definition, Basic objectives, Applications in various areas with examples.Collection of Data- Internal and External, Primary and secondary, Population and sample, Representative sample.Descriptive Statistics-Classification and tabulation of univariate data, graphical representation, Frequency curves.

Descriptive Measures:Measures of Central tendency (Mean, Median and Mode) and dispersion(Range, SD, MD and QD). Bivariate data - summarization, marginal and conditional frequency distribution.

Unit-II: Probability:

Random experiments, sample space, event, Axioms of Probability, addition and multiplication theorem, Conditional Probability, Baye's Theorem and related problems.

Unit-III: Random Variables

Random Variables- probability functions – distribution- properties - Mathematical expectation and its properties, Moments (including variance) and their properties, interpretation, Moment generating function.

Unit-IV: Probability Distributions:

Binomial, Poisson and Normal distributions-related problems,Basic concepts of Geometric, Uniform, Exponential, Chi-square, Student-t, and F- distributions.

UNIT-V: Calculus:

Basic concepts of differential and integral calculus, Evaluation of double integrals (Cartesian and polar form), Change of Variables and evaluation of triple integrals (Cartesian coordinates), and applications of double integrals- Area as double integration in Cartesian coordinates.

Text Books:

1. S.C. Gupta and V.K. Kapoor, Fundamentals of Mathematical Statistics, 11/e, Sultan Chand & Sons Publications, 2012.
2. *Fundamentals of Statistics*, vol. I & II, A. Goon, M. Gupta and B. Dasgupta, World Press.
3. *Higher Engineering Mathematics*, B. S. Grewal, Khanna Publication, Delhi.

Reference Books:

1. T.K.V.Iyengar, B. Krishna Ghandhi, S. Ranganathan and M.V.S.S.N.Prasad, Engineering Mathematics, Volume-I, 12th Ed., S. Chand Publishers, 2014
2. *A first course in Probability,* S.M. Ross, Prentice Hall.
3. *Probability and Statistics for Engineers,* (Fourth Edition), I.R. Miller, J.E. Freund and R. Johnson, PHI.
4. *Introduction to the Theory of Statistics*, A.M. Mood, F.A. Graybilland D.C. Boes,McGraw Hill Education.
5. *Advanced Engineering Mathematics*, (Seventh Edition), Peter V. O'Neil, Thomson Learning.

Course Outcomes:

At the end of the course, the student will be able to

1. summarize the basic concepts of statistics and use appropriate statistical methods in the analysis of sample data sets and analyse the data quantitatively, measure of averages and variability
2. make use of probabilities of events in finite sample spaces and experiments and their applications
3. use various statistical distributions to solve engineering problemsand its applications.
4. understand several well-known distributions, such asBinomial, Poisson and Geometrical distributions
5. employ the tools of double integrals and its applications.

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Year/Semester	I B. Tech/I Sem	L	T	P	C
Regulation Year	2020-21	3	0	0	3
Subject	Fundamentals of Computer Science				
Branch	CSBS				

Unit-I: Introduction to Problem Solving and C Programming

General problem Solving concepts: Algorithm, and Flowchart for problem solving with Sequential Logic Structure, Decisions and Loops.

Imperative languages: Introduction to imperative language; syntax and constructs of a specific language (ANSI C)

Types Operator and Expressions with discussion of variable naming and Hungarian Notation: Variable Names, Data Type and Sizes (Little Endian Big Endian), Constants, Declarations, Arithmetic Operators, Relational Operators, Logical Operators, Type Conversion, Increment Decrement Operators, Bitwise Operators, Assignment Operators and Expressions, Precedence and Order of Evaluation, proper variable naming and Hungarian Notation.

Unit-II: Conditional and Control Statements

Control Flow with discussion on structured and unstructured programming: Statements and Blocks, If-Else-If, Switch, Loops – while, do, for, break and continue, gotolabels, structured and un- structured programming.

Unit-III: **Functions**

Functions and Program Structure with discussion on standard library: Basics of functions, parameter passing and returning type, C main return as integer, External, Auto, Local, Static, Register Variables, Scope Rules, Block structure, Initialization, Recursion, Pre-processor, Standard Library Functions and return types.

Unit-IV: Pointers, Structures and Union

Pointers and Arrays: Pointers and address, Pointers and Function Arguments, Pointers and Arrays, Address Arithmetic, character Pointers and Functions, Pointer Arrays, Pointer to Pointer, Multi-dimensional array and Row/column major formats, Initialisation of Pointer Arrays, Command line arguments, Pointer to functions, complicated declarations and how they are evaluated.

Structures: Basic Structures, Structures and Functions, Array of structures, Pointer of structures, Self-referral structures, Table look up, typedef, unions, Bit-fields.

Unit-V: File I/O & Unix System Interface

Input and Output: Standard I/O, Formatted Output – printf, Formated Input – scanf, Variable length argument list, file access including FILE structure, fopen, stdin, sdtout and stderr

Unix system Interface: File Descriptor, Low level I/O – read and write, open, create, close and unlink

****Programming Method(Not for Evaluation):** Debugging, Macro, User Defined Header, User Defined Library Function, makefile utility.

Text Books:

1. The C Programming Language, (Second Edition) B. W. Kernighan and D. M. Ritchi, PHI.
2. Programming in C, (Second Edition)B. Gottfried, Schaum Outline Series.

Reference Books:

5. C: The Complete Reference,(Fourth Edition), Herbert Schildt, McGraw Hill.
6. Let Us C,YashavantKanetkar, BPB Publications.

Branch: CSBS **I Year – I Semester** **Regulation: R20**

Sub. Title: PRINCIPLES OF ELECTRICAL ENGINEERING

Sub.Code:

L	T	P	C
3	0	0	3

Learning Objectives:

- To learn the basic principles of electrical law's and analysis of networks.
- To understand about DC network analysis using theorems and simplification of networks
- To understand about the R-L, R-C, RLC series & parallel circuit and 3Ø AC balanced circuits.
- To understand the concepts of field, magnetic circuits, Faraday's law, Ampere's law and their applications
- To understand the basic principles of measurements, electrical wiring and Concept of earthing.

Unit-I

Introduction: Concept of potential difference, voltage, current, fundamental linear passive and active elements to their functional current-voltage relation, terminology and symbols in order to describe electric networks, voltage source and current sources, ideal and practical sources, concept of dependent and independent sources, kirchhoff-s laws and applications to network solutions using mesh and nodal analysis, concept of work, power, energy, and conversion of energy.

Unit-II

DC Circuits: Current-voltage relations of the electric network by mathematical equations to analyze the network (Thevenin's theorem, Norton's Theorem, Maximum Power Transfer theorem) Simplifications of networks using series-parallel, Star/Delta transformation. Superposition theorem.

Unit-III

AC Circuits: AC waveform definitions, form factor, peak factor, study of R-L, R-C,RLC series circuit, R-L-C parallel circuit, phasor representation in polar and rectangular form, concept of impedance, admittance, active, reactive, apparent and complex power, power factor, 3 phase Balanced AC Circuits (ƛ-Δ&ƛ-ƛ).

Unit-IV

Electrostatics and Electro-Mechanics: Electrostatic field, electric field strength, concept of permittivity in dielectrics, capacitor composite, dielectric capacitors, capacitors in series and parallel, energy stored in capacitors, charging and discharging of capacitors, Electricity and Magnetism, magnetic field and Faraday's law, self and mutual inductance, Ampere's law, Magnetic circuit, Single phase transformer, principle of operation, EMF equation, voltage ratio, current ratio, KVA rating, efficiency and regulation, Electromechanical energy conversion.

Unit-V

Measurements and Sensors: Introduction to measuring devices/sensors and transducers (Piezoelectric and thermo-couple) related to electrical signals, elementary methods for the measurement of electrical quantities in DC and AC systems(Current & Single-phase power). Electrical Wiring and Illumination system; basic layout of the distribution system, types of wiring system &wiring accessories, necessity of earthing, types of earthing, safety devices & system.

For Further Reading - Principle of batteries, types, construction and application, magnetic material and b-h curve, basic concept of indicating and integrating instruments.

Course Outcomes:

A student who has met the objective of the course will be able to:

- Learn basics of electrical circuits such as Kirchhoff-s laws and its applications
- Understand various network theorems and its applications in electrical circuits.
- Explore the basic principles and concepts involved in AC circuits and analyze power in series and parallel AC circuits.
- Gain knowledge on basic electrostatic field, electric field strength, different Laws and magnetic circuit
- Acquire knowledge on measurements, types of wiring and earthing.

Text Books:

1. *Electric Machinery,*(Sixth Edition) A.E. Fitzgerald, Kingsely Jr Charles, D. Umans Stephen, Tata McGraw Hill.
2. *A Textbook of Electrical Technology*,(vol. I),B. L. Theraja, Chand and Company Ltd., New Delhi.
3. *Basic Electrical Engineering*, V. K. Mehta, S. Chand and Company Ltd., New Delhi.
4. *Theory and problems of Basic Electrical Engineering,* (SecondEdition), J. Nagrath and Kothari, Prentice Hall of India Pvt. Ltd.

Reference Books:

1. *Basic of Electrical Engineering*, T. K. Nagsarkar and M. S. Sukhija, Oxford University Press, 2011.
2. *Introduction to Electrodynamics*, D. J. Griffiths, (Fourth Edition), Cambridge University Press.
3. *Engineering Circuit Analysis,* William H. Hayt& Jack E. Kemmerly, McGraw-Hill Book Company Inc.
4. *Fundamentals of Electrical and Electronics Engineering,*Smarjith Ghosh, Prentice Hall (India) Pvt. Ltd.

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Department of Basic Science

Syllabus: I B.Tech-I Semester

(R-20 Regulations)

(CS & BS Branch)

Course Title: Physics for Computing Science

L	T	P	C
3	0	0	3

Course Objectives:

- To identify the significance of Laser light and Understand the mechanism of emission of light, utilization of lasers as coherent light sources for low and high energy applications. Study of propagation of light through optical fibers and their implications in optical communications
- To identify the importance of the optical phenomenon i.e. interference, diffraction and polarization related to its Engineering applications
- Enlightenment of the concepts of Quantum Mechanics and to provide fundamentals of deBroglie matter waves, quantum mechanical wave equation and its application. Enlightenment of the importance of Electromagnetism
- To understand the physics of Semiconductors and their working mechanism and Enlighten the periodic arrangement of atoms in Crystalline solids – Learning the structural analysis through X-ray diffraction.
- Understand the principle and background of oscillations and To facilitate the students with the aid of advanced insight in the applied science.To learn the laws of the thermodynamics and its applications and To motivate the students to understand the Engineering Principles through basic ideas in Physics.

UNIT- I: Lasers and Fiber Optics

Lasers:

Einstein's theory of matter radiation interaction and A and B coefficients; amplification of light by population inversion, different types of lasers: Ruby Laser, and CO_2 laser, Properties of laser beams: mono- chromaticity, coherence, directionality and brightness, laser speckles, applications of lasers in engineering.

Fiber Optics:

Introduction to Optical Fibers-Total Internal Reflection- Construction of optical fibers -Acceptance angle- Numerical Aperture- Classification of fibers based on Refractive index profile, modes - Propagation of electromagnetic wave through optical fiber - Block Diagram of Fiber optic Communication.

Unit-II Interference Diffraction and Polarization of light

Interference:

Introduction-Theory of interference fringes- types of interference-Newton's rings,

Diffraction:

Introduction-Two kinds of diffraction- Difference between interference and diffraction-Fresnel's half period zone and zone plate- Fraunhofer diffraction at single slit-plane diffraction grating. Temporal and Spatial Coherence.

Polarization:

Introduction - Concept of production of polarized beam of light from two SHM acting at right angle; plane, elliptical and circularly polarized light, Brewster's law, double refraction

Unit-III Semiconductor Physics and Basic Idea of

Electromagnetisms Electromagnetisms:

Introduction-Continuity equation for current densities, Maxwell's equation in vacuum and non-conducting medium(Qualitative).

Quantum Mechanics:

Introduction- Planck's quantum theory-Matter waves, de-Broglie wavelength, Heisenberg's Uncertainty principle, time independent and time dependent Schrödinger's wave equation, Physical significance of wave function, Particle in a one dimensional potential box.

Unit-IV Quantum Mechanics and Crystallography

Semiconductor Physics:

Introduction– Intrinsic semiconductors – extrinsic semiconductors – Classification of solids on basis of energy band gap-Conductors, Semiconductors and insulators. Basic concept of band theory - origin of energy band – Bloch theorem (Qualitative).

Crystallography:

Introduction-Space lattice, Basis, Unit Cell and Lattice Parameters-, Bravais lattices,-Crystal Systems(3D)- coordination number-Packing fraction of SC, BCC and FCC structures- Miller indices-Seperation between successive (hkl) planes.

Unit-V Oscillation and Thermodynamics

Oscillation

Periodic motion-simple harmonic motion-characteristics of simple harmonic motion- vibration of simple spring mass system. Resonance-definition., damped harmonic oscillator – heavy, critical and light damping, energy decay in a damped harmonic oscillator, quality factor, forced mechanical and electrical oscillators(Qualitative).

Thermodynamics

Zeroth law of thermodynamics, first law of thermodynamics, brief discussion on application of 1st law, second law of thermodynamics and concept of Engine, entropy, change in entropy in reversible and irreversible processes.

Text Books:

1. Concepts of Modern Physics, (Fifth Edition) A Beiser, McGraw Hill International.

2. Fundamentals of Physics, David Halliday, Robert Resnick and Jearl Walker, Wiley plus.

Reference Books:

1. Optics, (Fifth Edition)AjayGhatak, Tata McGraw Hill.
2. Sears & Zemansky University Physics, Addison-Wesley.
3. Fundamentals of Optics,(Third Edition)Jenkins and White, McGraw-Hill.
4. Engineering Physics, M.N. Avadhanulu and P.G. Kshirasagar, S. Chand Publications.

Course Outcomes:

Upon the completion of the course the students will be able to:

CO1: Explain various types of emission of radiation. Identify the role of laser in engineering applications. Describe the construction and working principles of various types of lasers. Explain the working principle of optical fibers. Classify optical fibers based on refractive index profile and mode of propagation. Identify the applications of optical fibers in medical, communication and other fields

CO2: Explain the need of coherent sources and the conditions for sustained interference. Identify the applications of interference in engineering. Analyze the differences between interference and diffraction with applications. Illustrate the concept of polarization of light and its applications. Classify ordinary refracted light and extraordinary refracted rays by their states of polarization

CO3: Describe the dual nature of matter. Explain the significance of wave function. Identify the role of Schrodinger's time independent wave equation in studying particle in one-dimensional infinite potential well. Enlightenment of the importance of Electromagnetism

CO4: Outline the properties of charge carriers in semiconductors. Identify the type of semiconductor using Hall effect. Identify applications of semiconductors in electronic devices. Interpret various crystal systems and Analyze the characterization of materials by XRD. Identify the important properties of crystals like the presence of long-range order and periodicity, structure determination using X-ray diffraction technique.

CO5: Understand the principle and background of oscillations and learn the laws of the thermodynamics and its applications.

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DEPARTMENT OF BASIC SCIENCE

Year/Semester	I B.Tech-I Sem.	L	T	P	C
Regulation Year	R-20 2020-21	0	0	3	1.5
Name of the Subject	Business Communication and Value Science I				
Branch	Computer Science and Business Systems				

COURSE OBJECTIVES:

1. To understand what life skills are and their importance in leading a happy and well-adjusted life.

2. To motivate students to look within and create a better version of self.

3. To introduce them to key concepts of values, life skills and business communication.

Unit-I: Life Skills and Values

Self-Introduction, Demonstration of Skills and Values (Through a Presentation), Importance of Business Communication, Self-awareness, Recognizing one's Strengths and Opportunities, Identity, Body Awareness and Stress Management.

Activity: Write a Newspaper Report, A Conversation Between a Celebrity and an Interviewer, etc.

Unit-II: Basic Tenets of Communication

Overview of Communication Skills, Types of Communication, Verbal and Non-verbal Communication,

Barriers of Communication, Effective Communication, Difference between Listening and Hearing, Types of

Listening.

Parts of Speech, Tense, Sentence Formation, Common Errors, Questions and Question Tags.

Activity: Skit (Communication Skills Based), Listening Comprehension, etc.

Unit-III: Verbal Communication

Pronunciation, Clarity of Speech, Art of Questioning, Phrases, Idioms, Significant Abbreviations, GSL &

AWL.

Activity: Create a Podcast, etc.

Unit-IV: Written Communication

Email Writing, Summary Writing, Story Writing, Letter Writing, CV Writing.

Activity: Story Writing, etc.

Unit-V: Realities of Facing Life (ROFL)

Life Skills (understanding and application), Movie Based Learning, Critical Life Skills, Multiple

Intelligence, Embracing Diversity, Leadership, Team Work, Dealing with Ambiguity, Motivating People, Creativity.

Project: Community service –work with an NGO and make a presentation

COURSE OUTCOMES:

After completing the course, students will be able to

1. Recognize the need for life skills and values

2. Understand the basic tenets of communication

3. Apply the life skills to different situations

4. Understand and learn various kinds of written communication

5. Understand and apply life skills learnt

Text Books:

There are no prescribed texts for Semester 1 – there will be handouts and reference links shared.

Reference Books:

1. English vocabulary in use – Alan Mc‟carthy and O‟dell

2. APAART: Speak Well 1 (English language and communication)

3. APAART: Speak Well 2 (Soft Skills)

4. Business Communication – Dr. Saroj Hiremath

Web References:

Train your mind to perform under pressure- Simon sinek

https://curiosity.com/videos/simon-sinek-on-training-your-mind-to-perform-underpressure-capture-your-flag/

Brilliant way one CEO rallied his team in the middle of layoffs

https://www.inc.com/video/simon-sinek-explains-why-you-should-put-people-beforenumbers.html

Will Smith's Top Ten rules for success

https://www.youtube.com/watch?v=bBsT9omTeh0

Online Resources:

1. https://www.coursera.org/learn/learning-how-to-learn

2. https://www.coursera.org/specializations/effective-business-communication

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Department of Basic Science

Syllabus: I B.Tech-I Semester

(R-20 Regulations) (CS & BS Branch)

Course Title: Physics Lab for computing science

L	T	P	C
0	0	3	1.5

List of Experiments

1) Magnetic field along the axis of current carrying coil – Stewart and Gee
2) Determination of Hall coefficient of semi-conductor
3) Determination of Plank constant
4) Determination of wave length of light by Laser diffraction method
5) Determination of wave length of light by Newton's Ring method
6) Determination of laser and optical fiber parameters
7) Determination of Stefan's Constant.

I Year - I Semester **L T P C**

0 0 3 2

Fundamentals of Computer Science Lab

Course Objectives: Students are expected to

1. Formulating algorithmic solutions to problems and implementing algorithms in C
2. Notion of Operation of a CPU, Notion of an algorithm and computational procedure, editing and executing programs in Linux.
3. Understanding and implementing programs on branching, iteration and data representation using arrays.
4. Modular programming and recursive solution formulation.
5. Understanding and implementing programs on pointers and dynamic memory allocation.
6. Understanding miscellaneous aspects of C.

Course Outcomes:

After completion of the course, the student will be able to

1. Understand the basic terminology used in computer programming
2. Write, compile and debug programs in C language.
3. Use different data types in a computer program.
4. Design programs involving decision structures, loops and functions.
5. Explain the difference between call by value and call by reference
6. Understand Understanding and implementing programs on the dynamics of memory by the use of pointers
7. Use different data structures and Strings.

Exercise - 1 Basics

a) Write an algorithm, flowchart and implement a C program to find whether a given number is even or odd.

b) Write an algorithm, flowchart and implement a C program for finding GCD of 2 numbers.

c) Write an algorithm, flowchart and implement a C program for whether a year is leap year or not.

d) Write an algorithm, flowchart and implement a C program for converting Celsius to Fahrenheit and vice versa.

e) Write an algorithm, flowchart and implement a C program for simulate laws of motion

Exercise - 2 Basic Math

a) Write a C program to implement whether the given number is prime or not.

b) Write a C program to implement whether the given number is Armstrong or not.

c) Write a C program to print Floyd's triangle.

d) Write a C program to implement simple calculator using switch case.

Exercise - 3 Functions

a) Write a C program to implement parameter passing methods (call by value and call by reference).

b) Write a C program to implement Fibonacci series of the given numbers and factorial of the given number without recursion.

Exercise – 4 Recursion

a) Write a C program to implement Fibonacci series of the given numbers using recursion.

b) Write a C program to find factorial of a number using recursion.

Exercise – 5 Arrays

a) Write a C program to find sum of three numbers using pointers (call by reference).

b) Write a C program to find sum of elements in an array.

Exercise – 6 Searching

a) Write a C program for linear search in array.

b) Write a C program for binary search in array

Exercise – 7 Pointers

a) Write a C program to access array elements using pointer

b) Write a C program to find sum of array elements using pointers

Exercise – 8 Arrays-Continued

Demonstration of arrays

a) Write a C program for matrix addition.

b) Write a C program for matrix multiplication.

c) Write a C program for matrix transpose.

Exercises - 9 Files

a) Write a C program to open a pre-existing file.

b) Write a C program to find sum of 2 numbers in a file.

c) Write a C program for basic file operations in different modes.

Exercise - 10 Structures

a) Write a C program to store information of a movie using structures.

b) Write a C program to store information of a movie using union.

c) Write a C program to find sum of two complex numbers using structure to a function.

Exercise – 11 Strings

a) Implementation of string manipulation operations with library function.

i) copy

ii) concatenate

iii) length

iv) compare

b) Implementation of string manipulation operations without library function.

i) copy

ii) concatenate

iii) length

iv) compare

Exercise – 12 Dynamic Memory Allocations

a) Write a C program to find sum of n elements entered by user. To perform this program,allocate memory dynamically using malloc () function.

b) Write a C program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using calloc () function.

Understand the difference between the above two programs.

Exercises - 13 User Defined Header File

Write a C program to add and multiply two numbers using user defined header file.

Exercises – 14 Command Line Interface

a) Write a C program for finding Fibonacci using command line.

b) Write a C program for finding result of two numbers by reading the operator from command line(addition/subtraction/multiplication/division)

Exercises – 15 Parser

a) Write a C program for function parses and returns a single expression.

b) Write a C program for modifying parsing grammar to allow assignment statement