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| **B. TECH 1st SEMESTER** | **T** | **P** | **C** |
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| **ENGINEERING PHYSICS** | | | |

**UNIT-I:**

INTRODUCTION:

Introduction to Computer System, Hardware and Software, Algorithm, Flowchart, Types of Computer Languages.

FUNDAMENTALS OF C:

C Character Set, Tokens, Identifiers, Constants, Basic Data Types and Sizes, Operators: Arithmetic Operators, Relational Operators, Logical Operators, Conditional Operator, Increment and Decrement Operators, Assignment Operators, Bit-wise Operators, Special Operators, Expressions, Operator Precedence and Order of Evaluation, Evaluation of Expressions, Type Conversions: Implicit and Explicit.

**UNIT-II:**

CONTROL STRUCTURES:

Selection Statements: if-else Statement, null else Statement, nested if Statement, else-if Statement, switch Statement, Applications.

Iterative Statements: break statement, continue statement, counter and event controlled loops, while loop, do-while loop, for loop, Looping Applications.

Arrays:

Introduction to arrays, declaration, initialization and accessing array elements of 1-D Arrays, declaration, initialization and accessing elements of 2-D Arrays, Strings, String Functions, Application of Arrays.

**UNIT-III:**

FUNCTIONS:

Introduction to Functions, User-Defined & Library Functions, Parameter Passing, Return Statement Storage Class, Recursion, Recursive Functions and Recursive Solutions for different problems, C Preprocessor, Passing 1-D Arrays and 2-D Arrays to Functions.

**UNIT-IV:**

POINTERS:

Introduction to Pointers, Declaration, Initialization and Accessing a Pointer, Passing by Address, Pointer as Function Argument, Pointer Arithmetic, Pointer to Pointer, Pointer to Multi-dimensional Arrays, Dynamic Memory Management Functions, Command Line Arguments.

**UNIT-V:**

DERIVED TYPES:

Definition, Declaration and Initialization of Structures, Accessing Structures, Nested structures, Array of Structures, Structures and Functions, pointer to structure, Self-Referential Structures,bit-fields, Definition, Declaration and Initialization of Unions, Type-definition.

**UNIT-VI:**

FILES:

Introduction to Files, File Streams: binary and text, Formatted I/O functions: fprintf( ) , fscanf( ), and File I/O Functions: feof( ), rewind( ), ferror( ), fopen( ), fclose( ).

**Text Books:**

The C Programming Language Kernighan &Ritchie PHI

Programming in C: A Practical Approach Ajay Mittal Pearson

Programming in ANSI C E Balagurusamy TMH

**Reference Books:**

Understanding and using C Pointers Richard Reese Oreilly