Operating System

UNIT - I Program Development & Introduction to C

1.1 Program Algorithm & flow chart: Program development cycle- Programming language levels & features. Algorithm – Properties &classification of Algorithm, flow chart – symbols, importance & advantage of flow chart.

1.2 Introduction C: - History of C – features of C structure of C program – Compiling, link & run a program. Diagrammatic representation of program execution process.

1.3 Variables, Constants & Data types: C character set-Tokens- Constants- Key words – identifiers and Variables – Data types and storage – Data type Qualifiers – Declaration of Variables – Assigning values to variables- Declaring variables as constants-Declaration - Variables as volatile- Overflow & under flow of data

1.4 C operators: Arithmetic, Logical, Assignment Relational, Increment and Decrement, Conditional, Bitwise, Special Operator precedence and Associativity. C expressions – Arithmetic expressions – Evaluation of expressions- Type cast operator

1.5 I/O statements: Formatted input, formatted output, Unformatted I/O statements

UNIT – II DECISION MAKING, ARRAYS and STRINGS 16 Hrs

2.1 Branching: Introduction – Simple if statement – if –else – else-if ladder, nested if-else-Switch statement – go statement – Simple programs.

2.2 Looping statements: While, do-while statements, for loop, break & continue statement – Simple programs

2.3 Arrays: Declaration and initialization of One dimensional, Two dimensional and Character arrays – Accessing array elements – Programs using arrays

2.4 Strings: Declaration and initialization of string variables, Reading String, Writing Strings – String handling functions (strlen (), strcat (), strcmp ()) – String manipulation programs

UNIT – III FUNCTIONS, STRUCTURES AND UNIONS 16 Hrs

3.1 Built –in functions: -Math functions – Console I/O functions – Standard I/O functions – Character Oriented functions – Simple programs.

3.2 User defined functions: Defining functions & Needs-, Scope and Life time of Variables, Function call, return values, Storage classes, Category of function – Recursion – Simple programs

3.3 Structures and Unions: Structure – Definition, initialization, arrays of structures, Arrays with in structures, structures within structures, Structures and functions – Unions – Structure of Union – Difference between Union and structure – Simple programs.

UNIT - IV POINTERS

4.1 Pointers: Definition – advantages of pointers – accessing the address of a variable through pointers - declaring and initializing pointers- pointers expressions, increment and scale factor- array of pointers- pointers and array - pointer and character strings –function arguments – pointers to functions – pointers and structures – programs using pointer.

4.2 Dynamic Memory Management: introduction – dynamic memory allocation – allocating a block memory (MALLOC) – allocating multiple blocks of memory (CALLOC) –releasing the used space: free – altering the size of a block (REALLOC) – simple programs

UNIT –V FILE MANAGEMENT AND PREPROCESSORS 16 Hrs

5.1 File Management: Introduction-Defining and opening a file-closing a file-Input/ Output operation on files—Error handling during I/O operations –Random Access to files—Programs using files

5.2 Command line arguments: Introduction – argv and argc arguments – Programs using command Line Arguments –Programs

5.3 The pre-processor: Introduction – Macro Substitution, File inclusion, Compiler control directives.

Text book:

1. Programming in ANSI C 4E by Prof. E. BALAGURUSAMY, the TATA McGRAW –

HILL publications.