Subject Code : RNENS10

PAPER X – C – PROGRAMMING LANGUAGE

Unit I :

Overview of C: Introduction, importance of C, sample C programs, Basic structure, Programming style, executing a C-programme.

Constants, Variables and data types: Introduction, character set, C-tokens, key words and identifiers, constants, variables, data types, declaration of variables, assigning values to variables, defining symbolic constants.

Operators and Expressions: Introduction, Arithmetic, Relational, Logical, Assignment, Increment and Decrement and Special operators, arithmetic expressions, evaluations of expressions, precedence of arithmetic operators, type conversions in expressions, operator precedence and mathematical functions.

Managing input and output operators: Introduction, reading a character, writing a character, formatted input and formatted output.

Unit II :

Decision making and branding: Introduction, Decision making with IF statement, simple IF statement, the IF-ELSE statement, nesting of IF-ELSE statement, the ELSE-IF ladder, the SWITCH statement, the ? operator, GOTO statement.

Decision making and Looping: Introduction, the WHILE statement, the DO statement, FOR statements, jumps in loops.

Unit III :

Arrays: Introduction, One dimensional arrays, two dimensional arrays, initializing Two dimensional arrays, Multi dimensional arrays.

User defined functions: Introduction, need for user defined functions, a multi function program, the form of C-functions, Return values and their types, calling a function, category of functions, no arguments and no return values, arguments but no return values, arguments with return values, handling of non-integer functions, nesting of functions, Recursion, Function with arrays, the scope and life time of variables in functions, ANSI C functions.

Unit IV :

Structures and Unions: Introduction, Structure definition, giving values to members, Structure initialization, comparison of structures, variables, arrays

of structures, structures within structures, structures and functions, Unions, size of structures, Bit fields.

Pointers: Introduction, understanding pointers, accessing the address of variables, declaring and initializing pointers, accessing through its pointers, pointer expression, pointer increments and scale factor, pointers and arrays, pointer and character strings, pointer and function, pointer and structures, pointers on pointers.

Unit V :

Dynamic memory allocation and Linked lists: Introduction, Dynamic memory allocation, concepts of linked lists, advantage of linked lists, types of linked lists, pointers revisited, basic test operators, application of linked lists.

The Preprocessors: Introduction, Macro substitution, file inclusion, compiler control directives, ANSI addition.

Text Book:

1. E. Balagurusamy, "Programming in ANSI C', Tata MCGraw Hill, Publishing Company Ltd., (2nd edition), New Delhi.
   Chapters 1 to 7, 9, 11 and 14.