PROBLEM SOLVING TECHNIQUES USING C

Upon successful completion of the course on Problem Solving Techniques Using C, the students will be able to:

1. Recall the generations of programming languages and distinguish between Machine Language, Assembly Language, Procedural Language, and Object Oriented Language.
2. Analyze the features and structure of a C program, including the character set, identifiers, keywords, variables, constants, and the C library.
3. Classify and utilize different data types in C such as primitive, user-defined, enumerated, and understand type casting and declaration.
4. Evaluate various operators in C, explain their precedence and associativity, and construct expressions using operators effectively.
5. Utilize standard input-output operations in C, including functions with escape sequences and format specifiers.
6. Formulate decision-making statements such as if-else, switch-case, and the ternary operator for effective program flow control.
7. Construct iterative statements using for, while, and do-while loops, incorporating control statements like break and continue.
8. Design functions in C by declaring, calling, and defining them, including an understanding of recursive functions.
9. Analyze the scope of variables and understand different storage classes in C.
10. Implement arrays in C by declaring and using both 1-D and 2-D arrays, comprehend strings, and pass arrays to functions.
11. Analyze pointers in C with a brief understanding of their declaration and usage, including passing pointers to functions through Call-By-Value and Call-By-Address methods.
12. Construct and utilize structures and unions in C programs.
13. Employ macros in C for various purposes, including their declaration and usage.
14. Execute basic input and output operations on disk files in C, including sequential and random file access for effective file handling operations.