

CLUSTER UNIVERSITY SRINAGAR
COMPUTER APPLICATIONS
B.G. 2ND SEMESTER

Unit I - Introduction:

C Language-An overview, Merits of C Programming Language, Applications of C Programming Language, Translators of C Programming Language, Structure of C program, Character Set of C, Variables, Constants, Datatypes, Identifiers, Keywords, Named Constants, Input/Output functions.

Unit II – Operators & Expressions

Operator, Operand, Expression, Basic Arithmetic Operators, Arithmetic Assignment Operators/Abbreviated Assignment Expressions, Increment & Decrement Operators, Lvalue, Rvalue, Relational Operators, Logical Operators, Bitwise Operators, Conditional Operator(Ternary Operator), type casting , implicit and explicit type casting.

Unit III – Control Structures

Decision Control Structures – if, if else, if else if, Nested if, switch case statement

Iterative Control Structures/Loops – while loop, do while loop, for loop, nested loops, goto statement, break, continue, return statement.

Functions- Function Prototype, User defined functions, Declaring Functions, Defining functions, returning values from functions, Passing Parameters to Function, Recursion, Storage Classes, Lifetime and Scope of variables.

Unit IV – Arrays & Pointers

Memory Reference, Pointer Variable, Address Operator, Value At Address Operator, Pointer Arithmetic, Call by Value, Call by Reference, Declaring One Dimensional Array, One Dimensional Array Initialization, Reading Elements of

1-D Array at Runtime, Multi-Dimensional Arrays, Declaring Two Dimensional Array, Two Dimensional Array Initialization, Reading Elements of 2-D Array at Runtime, Matrix Addition, Matrix Multiplication, Arrays and Pointers.

Suggested Readings:

1. **E. Balagurusamy**, Programming in ANSI C, **Tata McGraw Hills, New Delhi**
2. **Y. Kanetkar**, Let Us C, **BPB, New Delhi**.
3. **B. W. Keringhan & D.M Ritche** , C Programming Language, **PHI Pvt. Ltd.**

List of Practical's:

1. Write a program to implement all arithmetic operations.
2. Write a program to calculate area and circumference of a circle
3. Write a program to calculate simple interest
4. Write a program to find roots of quadratic equation.
5. Write a program to find greatest of two numbers
6. Write a program to find greatest of three numbers.
7. Write a program to generate marks card of a student.
8. Write a program using switch case statement to perform arithmetic operations based on choice input by user
9. Write a program to generate Multiplication table of N
10. Write a program to find greatest of N numbers
11. Write a program to find factorial of N
12. Write a program to find reverse of a given number
13. Write a program to find sum of digits of a number
14. Write a program to find whether a number is prime or not
15. Write a program to generate prime series between 1 to 1000
16. Write a program to generate Fibonacci series
17. Write a program to search a given element in array
18. Write a program to print diagonal elements of matrix
19. Write a program to swap two values using call by reference
20. Addition of two numbers using function.