

CS3251-Programming in C

UNIT I

BASICS OF C PROGRAMMING

1. Describe the structure of a C Program.
2. List the different data types available in C.
3. What are constants? Explain the various types of constants in C.
4. Explain the different types of operators available in C.
5. Describe the various looping statements used in C with suitable examples.
6. Explain about various decision making statements available in C with illustrative programs.
7. Write the operations of compilation process.
8. Write a C program to print the Fibonacci series of a given number.
9. Write a C program to solve the quadratic equation and to find a Factorial of a given number.
10. Write a C program to check whether a given number is prime number or not.

UNIT II

ARRAYS AND STRINGS

1. What is an array? Discuss how to initialize a one dimensional and two dimensional arrays with suitable example?
2. Write a C program to search an element in a given array using linear and binary search.
3. Write a C program for sorting an array of numbers using selection sort.
4. Write a C program to addition, subtract and multiply two matrices.
5. Write a C program to scaling transformations of a matrix.
6. Write a C program to determinant a matrix.
7. Write a C program to transpose a matrix.
8. Write a C program to find mean, median and mode.
9. Explain in detail about string and list the various string operations with example.
10. Write a C program to find out the length and reverse of the string without using builtin function

UNIT III

FUNCTIONS AND POINTERS

1. What is a function in C? Explain the steps in writing a function in C program with Example.
2. Classify the function prototypes with example C program for each.
3. What is recursion? Write a C program to find the sum of the digits, to find the factorial of a number and binary search using recursion.
4. Write a C program to design the scientific calculator using built-in functions.
5. Explain about pointers and write the use of pointers in arrays with suitable example.
6. Explain the concept of pass by value and pass by reference. Write a C program to swap the content of two variables using pass by reference.

UNIT IV

STRUCTURES

1. What is a structure? Create a structure with data members of various types and declare two structure variables. Write a program to read data into these and print the same. Justify the need for structured data type.
2. Write a C program to store the employee information using structure and search a particular employee using Employee number.
3. Define and declare a nested structure to store date, which including day, month and year.
4. Define a structure called student that would contain name, regno and marks of five subjects and percentage. Write a C program to read the details of name, regno and marks of five subjects for 30 students and calculate the percentage and display the name, regno, marks of 30 subjects and percentage of each student.
5. Explain about array of structures and pointers in structures with example program
6. Write a C program to create mark sheet for students using self-referential structure.
7. Discuss about dynamic memory allocation with suitable example C program.
8. Explain about singly linked list with suitable example C program.

UNIT V

FILE PROCESSING

1. Explain about files and with it types of file processing.
2. Compare sequential access and random access.
3. Write a C program to finding average of numbers stored in sequential access file and random access file.
4. Write a C program for transaction processing using random access files.
5. Describe command line arguments with example C program.
6. Write a C Program to calculate factorial and to generate Fibonacci series by using command line arguments.

