

MCA 24104
MCA DEGREE EXAMINATIONS
FIRST SEMESTER
C PROGRAMMING & DATA STRUCTURES
(w.e.f. Admitted Batch 2024 - 25)

Time: 3 Hours

Max. Marks: 75M

SECTION - A

All Questions Carry Equal Marks

Note :- All parts of the questions must be answered at one place only **(4 X 15 = 60 M)**

1. a. Explain about flowcharts? Draw the flow chart of sum of two numbers program.
b. Describe the concept of algorithms with examples
(OR)
2. a. Explain various Decision Control Statements in C language?
b. Elaborate operators concept in C Language
3. a. Explain about storage classes in C Language..
b. Write a C program to swapping of two numbers using call-by-value and Call-by-reference.
(OR)
4. a. Define Recursion? Write a C Program for factorial of a number using recursive functions
b. Explain Dynamic Memory Allocation in C Programming?
5. a. Differentiate Structures and Unions? Explain with example.
b. Explain about nested structures? Write Example for nested structures.
(OR)
6. a. Explain about Stack and its operations?
b. Explain implementation queue with its operations?
7. a. Describe Tree Data Structure and its representations.
b. Define Linked Lists? Explain implementation of single linked List with its operations?
(OR)
8. a. What is searching? Write a C Program for Linear Search.
b. Apply Quick Sort algorithm to sort the data elements: 12, 5, 3, 8, 16, 6, 4 and 14. Justify the steps.

SECTION-B

Answer **Any 5** of the Following.

(5 X 3 = 15 M)

9. What are the various basic data types in C?
10. Write the syntax for conditional operator.
11. What are the uses of Pointers?
12. Describe the steps in writing a function in a C program.
13. Define File operations?
14. What is arrays of structures
15. Write about Graph Representations.
16. What is Double Linked list?
