1220

Code : 15CS41T

Register Number

DATA STRUCTURE USING 'C'

Time : 3 Hours]   [Max. Marks : 100

Note :   (i)   Answer any **six** full questions from Part – **A**. Each carries **five** marks.
      (ii) Answer any **seven** full questions from Part – **B**. Each carries **ten** marks.

PART – A

5 × 6 = 30

Answer any **six** full questions. Each carries **five** marks.

1. Discuss the use of address operator and indirection operator with pointers.   **5**

2. Summarize the advantages of dynamic memory allocation in C language.   **5**

3. Explain how to handle errors during file I/O operations.   **5**

4. Distinguish between linear and non-linear data structures.   **5**

5. Explain primitive data types.   **5**

6. Explain queue and its sequential representation.   **5**

7. Explain binary tree and its representation.   **5**

8. Discuss recursion and properties of recursive definition.   **5**

9. Explain the concept of binary search.   **5**

[Turn over

PART – B $7 \times 10 = 70$

Answer any **seven** full questions. Each carries **ten** marks.

10. Write a program to copy the contents of one file to another.   **10**

11. Write the 'C' functions to insert the node at the end of the singly linked list and display the contents of the singly linked list.   **10**

12. Write a C program to find the smallest element in an array of n elements using pointers.   **10**

13. Explain circular linked list and doubly linked list.   **10**

14. Write a 'C' program to implement push and pop operations of stack.   **10**

15. Write a C program to implement queue using arrays.   **10**

16. Illustrate Binary tree tranersal techniques with an example.   **10**

17. Explain the strictly Binary Tree and complete Binary Tree with an example.   **10**

18. Write a C program to implement bubble sort method.   **10**

19. Write a C program to implement linear search.   **10**