1098

Code : 15CS41T

Register Number

IV Semester Diploma Examination, April/May-2019

DATA STRUCTURES USING 'C'

Time : 3 Hours] **[Max. Marks : 100**

Instructions : (i) Answer any **six** full questions from PART – **A**. Each questions carries **5** marks.

(ii) Answer any **seven** full questions from PART – **B**. Each questions carries **10** marks.

PART – A

5 × 6 = 30

Answer any **six** questions. Each carries **5** marks.

1. Explain declaration and initialization of pointers variables. **5**

2. Give the differences between call-by-value and call-by-reference methods. **5**

3. With an example; Explain how to handle errors during I/o operation on file. **5**

4. What is data structures ? List different types of data structures. **5**

5. Explain any two types of Linked list. **5**

6. Define Queue : How to represent Queue in 'C' using array. **5**

7. Explain strictly Binary tree and complete binary tree with as example. **5**

8. Discuss the use of address operator and indirection operator with pointer. **5**

9. Explain fseek ( ) and ftell ( ) functions with syntax and example. **5**

PART – B

$10 \times 7 = 70$

Answer any **seven** full questions. Each carries **10** marks.

10. List and explain dynamic memory allocation functions in C. **10**

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

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

13. Write algorithm to PUSH and POP operations of stack. **10**

14. Explain circular Queue and Double ended Queue. **10**

15. Define free traversal. List and explain types of free traversals. **10**

16. Write a 'C' program to implement bubble sort technique. **10**

17. (a) List the applications of stack. **4**

    (b) Convert the following expression to prefix and postfix (a + b) * (d – f). **6**

18. Explain with an example, working of Binary search technique. **10**

19. Define the following : $2 \times 5 = 10$

    (a) Root node

    (b) Leaf node

    (c) Path

    (d) Sibling

    (e) Degree of attrce