

Time: 3 Hours

| Register | | | | |
|----------|--|--|--|--|
| Number | | | | |

Code: 15CS41T

| Max. Marks : 100

IV Semester Diploma Examination, April/May-2017

DATA STRUCTURES USING C.

| Note: | (i) | Answer any six full questions from Part – A. Each question carries 5 marks. | | | | | |
|-------|------|--|--|--|--|--|--|
| | (ii) | ii) Answer any seven full questions from Part – B. Each question carries 10 marks. | | | | | |
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| | | PART – A | | | | | |
| | | BETA CONSOLE! | | | | | |

Diploma - [All Branches] Explain pointer and show how to declare and initialize a pointer. 1. 2. Write a C program to create a dynamic array. 5 Explain different file opening modes. 3. Diploma Question Papers [2015-Write a C program to copy one file to another using command line arguments. 4. Define data structure and give the detailed classification of data structures. 5 5. Compare singly linked list with doubly linked list. 5 6. 7. Explain the following with respect to binary tree: 5 (a) root (b) parent degree of a node (c) (d) subtree strictly binary tree (e) 5 Write C representation of a node in a binary tree. 8.

9. Explain the concept of selection sort. 5

1 of 2 | Turn over

PART - B

10. Illustrate pointer arithmetic with examples.

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11. Explain the following functions with their syntax:

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- (i) fseek()
- (ii) ftell()
- (iii) fgetC()
- (iv) fopen()
- 12. Write C functions to insert a node at the beginning and to delete a node from the end of a linked list.
- 13. Write C functions to implement PUSH and POP operations of a stack.

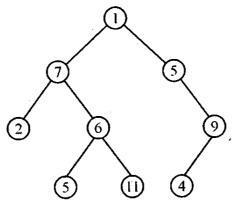
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14. Write a program to implement queue in C using linked list.

BETA CUNSOLE!

- 15. Explain the insertion and deletion operation on circular queue with neat diagram and loma [All Branches]
- Explain binary tree traversal techniques. Traverse the following binary tree with them.





- 17. Write an algorithm to convert an infix expression to postfix form.
- 18. List the applications of queues and linked list.
- 19. (a) List advantages and disadvantages of linked list.
 - (b) Explain circular linked list with diagram. 5