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CSIT124 Enrol. No. .9777.....

[ET]

END SEMESTER EXAMINATION : NOV.-DEC., 2016

DATA STRUCTURES USING C

Time : 3 Hrs. *Maximum Marks : 70*

Note: ***Attempt questions from all sections as directed.***

SECTION – A (30 Marks)

Attempt any **five** *questions out of* **six.**

Each question carries **06** *marks.*

1. Define a string array. What basic operations can be done on a string array ? Give few brief examples to explain.

2. State the steps and convert the following expression from infix to postfix notation :

   R / D – Y * (G / C * (D – E) + B / Z) + S * A

3. Describe the functional code for deleting a desired node in a Single Linked List.

4. Describe binary trees along with its representation. How will you search an element in a binary tree? Explain.

5. Define hashing, hash functions and a hash table along with a labelled diagram.

6. Describe taking an example 'linked representation' of a graph.

SECTION – B (20 Marks)

Attempt any **two** *questions out of* **three.**

Each question carries **10** *marks.*

7. Discuss the programme code in 'C' language to create, insert and display the elements in a doubly linked list.

8. Explain clearly the logic behind using 'treaded binary trees' in data structures. Draw a labelled diagram to show the working of the threaded binary tree.

9. Discuss various Collision Resolution Techniques with suitable examples.

SECTION – C (20 Marks)

(Compulsory)

10. (a) Explain the following :– (5)

(i) Tower of Hanoi

(ii) Priority queues

(b) Write on Sparse Matrix, take an integer Sparse Matrix of size 4 by 4 and give its linked list representation. (5)

(c) Write Kruskal's algorithm for finding the Minimm Spanning Tree. (5)

(d) Outline the distinguishing features of Depth First Search (DFS) and Breadth First Search (BFS) in the context of graphs. (5)