R13

Code No: 113BP

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech II Year I Semester Examinations, May/June-2015

DATA STRUCTURES

(Common to CSE, IT)

Time: 3 Hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A (25 Marks)

1.a) Define Time Complexity. [2M]
b) Write brief note on Sparse Matrix. [3M]
c) Write the Stack ADT. [2M]
d) Write the steps for converting expression from infix to postfix. [3M]
e) Define Graph. [2M]
f) Explain about Threaded Binary Trees. [3M]
g) Define Sorting and list the Sorting Methods. [2M]
h) Write about Hash Functions. [3M]
i) Write the properties of Binary Search Trees. [2M]
j) Write about Standard Trie. [3M]

PART-B (50 Marks)

2.a) Explain Omega and Theta notations with examples.
b) Explain about Circular linked lists. [5+5]

OR

3.a) Explain Big O Notation with an example.
b) List and Explain about Double Linked List operations. [5+5]

4.a) Write a program to implement Circular Linked List.
b) Define queue. Discuss about the various representations of a queue. [5+5]

OR

5.a) Write a C Program to describe implementation of recursion.
b) What is ADT? Write the ADT for Queue Operations. [5+5]

6.a) Write a C Program to implement BFS.
b) Write a C program to implement Binary Tree. [5+5]

OR

7.a) Explain Adjacency matrix Graph Representation method.
b) Explain about MaxHeap operations with an example. [5+5]

8.a) Write a C Program for Linear Search. [5+5]
b) Explain about Collision Resolution Methods in Hashing.

OR

9.a) Explain Radix Sort with an example. [5+5]
b) Discuss about Dynamic Hashing.

10.a) Explain about Insertion operation in Red Black Tree with an example. [5+5]
b) Discuss about AVL Tree with an example.

OR

11.a) Explain about Insertion operation on B Tree of order m with an example. [5+5]
b) Discuss about pattern matching.

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