Code No: 113BP

R13

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.
b) Explain about Collision Resolution Methods in Hashing. [5+5]

OR

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

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

OR

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

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