Code No: 153AK

R18

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech II Year I Semester Examinations, December - 2019
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 as sub questions.

PART – A

(25 Marks)

1.a) Explain how does linked stack differ from a linear stack. [2]
b) Define Searching. [2]
c) How many binary trees are possible with four nodes? [2]
d) Define tree traversal. [2]
e) What is pattern? [2]
f) Write the pseudo code for reversing the List using Stacks. [3]
g) Discuss about linear probing. [3]
h) Write about splay trees. [3]
i) What is Graph? Define degree of vertex. [3]
j) Write a short notes on standard tries. [3]

PART – B

(50 Marks)

2. What is priority Queue? Explain the implementation of Priority queue? Write an algorithm for operations on Priority queues. [10]

OR

3.a) Discuss about the stack with examples.
b) Write an algorithm to implement queue using stack. [5+5]

4. What is collision? Explain different collision resolution techniques with examples. [10]

OR

5. Describe the operations of skip list with an example. [10]

6. Write an algorithm for creation of binary tree using in-order traversal and post order traversals. [10]

OR

7. Construct the AVL tree of the following data.
38, 40, 50, 2, 5, 76, 25, 14, 7 [10]

8. How to represent graphs? Explain. [10]

OR

9. Explain Heap sort algorithm. Create Heap for the following elements and then sort them.
(13, 102, 405, 136, 15, 105, 390, 432, 28, 444). [10]

10.a) Explain about Boyer-Moore algorithm in detail.
b) Discuss about Suffix tries. [5+5]

OR

11. Write Knuth-Morris-Pratt pattern matching algorithm. [10]

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