Code No: 153AK
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech II Year I Semester Examinations, September - 2021
DATA STRUCTURES
(Common to CSE, IT, ITE)

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

Answer any five questions
All questions carry equal marks
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1.a) Write an algorithm of Push and Pop operations on a stack.
  b) Differentiate between stack and queue.   [8+7]

2.   Insert the following list of elements into the hash table by using Quadratic probing (size of Hash table is 13) 65, 34, 79, 114, 26, 85, 55, 89, 22, 98.   [15]

3.   Insert the following list of elements from the Red- Black tree. Delete the elements 18, 2 and 30 from the Red-Black tree 12, 30, 36, 18, 25, 9, 4, 2, 17, 14, 20, 47.   [15]

4.   Sort the following list of elements by using Merge sort
       30, 56, 78, 99, 12, 43, 10, 24, 85   [15]

5.a) Write an algorithm of Standard Trie.
  b) Explain the features that distinguish between Boyer Moore algorithm from the conventional algorithms.   [7+8]

6.a) Write an algorithm for insertion of node at last position in Linear Linked List.
  b) Evaluate the following postfix expression using stack. Show each step
     5 3 + 6 2 / * 3 5 * +.   [7+8]

7.   Write an algorithm on skip list operations insertion and deletion.   [15]

8.   Explain the operations of Splay tree with an example.   [15]

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