

Code No: 153AK**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech II Year I Semester Examinations, October - 2020****DATA STRUCTURES****(Common to CSE, IT)****Time: 2 hours****Max. Marks: 75****Answer any five questions****All questions carry equal marks**

- 1.a) Write an algorithm of Insert and Delete operation in Singly Linked List.
- b) Convert the following infix expression into postfix expression
 $A + B - C * D * E \$ F \$ G$ [7+8]
2. Explain about the various hash collision resolution techniques with an example. [15]
3. Insert the following list of elements from the AVL tree. Delete the elements 18, 2 and 30 from the AVL tree 12, 30, 36, 18, 25, 9, 4, 2, 17, 14, 20, 47 [15]
- 4.a) Differentiate between BFS and DFS.
- b) Explain about external sorting with an example. [7+8]
- 5.a) Write an algorithm of compressed Trie.
- b) Explain about the Brute force algorithm with an example. [7+8]
- 6.a) Write a program to implement stack using linked list.
- b) Explain the operations of Queue with an example. [8+7]
7. Explain about:
 - a) Rehashing
 - b) Extendible hashing[15]
8. Write an algorithm to delete an element from the binary search tree. [15]

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