Roll No. | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 8

M.Tech. (CSE Engg.) (2018 Batch) (Sem.–1)

ADVANCED DATA STRUCTURES

Subject Code : MTCS-102-18

Paper ID : [75154]

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1.Attempt any FIVE questions out of EIGHT questions.

2.Each question carries TWELVE marks.

1. a. How does a hash table implementation compare with a tree table implementation of Set and Table?

   b. What are some advantages and disadvantages of quadratic probing?

2. Write pseudo code for inserting to, searching from and deleting from a separate chaining hash table.

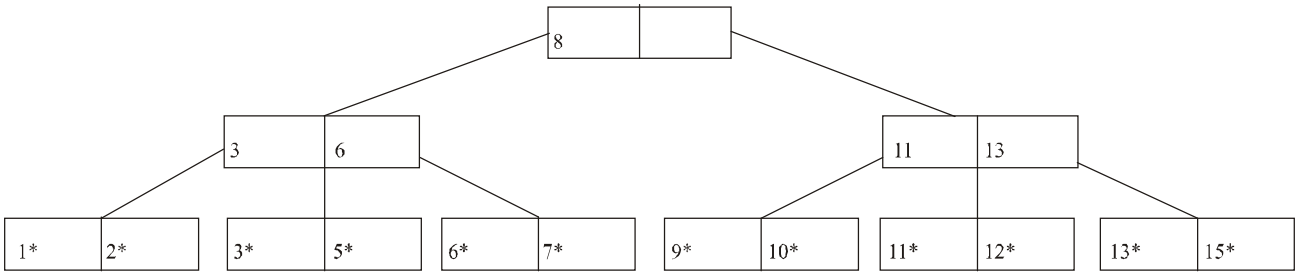
3. a. Given two strings A and B and a few substrings, Write an algorithm whether the substrings exist in either of the two strings.

   b. What are the various factors affecting the Hash Table Design?

4. a. Write a function to delete a node from BST considering all possible cases.

   b. What is an expression tree? Write a program to evaluate an expression tree.

5. Consider the following tree :



Suppose this is an ISAM tree. Show the tree after inserting the following elements: (16, 17, 18) and then deleting the following elements: (11, 12, 16).

6. a. Where are B trees used?

   b. What is meant by B tree index?

   c. What is the order of AB tree?

   d. What is B tree degree?

7. a. In a sorted set of elements skip lists, What are the various operations possible?

   b. Explain the Boyer-Moore algorithm with an example.

8. Write short notes on :

   a. Solution to LCS problem using Dynamic Programming.

   b. Brute force Pattern Matching.