Code No: RT22053 **R13** SET - 1

II B. Tech II Semester Supplementary Examinations, April/May - 2019
ADVANCED DATA STRUCTURES
(Com. to CSE, IT)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**

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PART-A

1. a) What is the worst case time complexity of searching an element in case of chaining method? Give an example of worst case time complexity?
   b) Why LR and RL are called complex rotations explain with an example?
   c) Create a min-heap and max-heap for the following list
   (20; 10; 5; 4; 25; 70; 60; 40)
   d) Discuss about time complexity of all pairs shortest method?
   e) Discuss about time complexity of merge sort?
   f) What are the applications of pattern matching algorithm? (4M+4M+4M+4M+3M+3M)

PART-B

2. Following elements are inserted into an empty hash table with hash function f(x) = x% 17 and quadratic probing. Explain.
   58, 48, 79, 46, 54, 32, 24, 19, 18, 35, 15, 84, 16, 12 (16M)

3. a) Draw the hash table for each insertion.
   b) What is the load factor after last insertion?
   c) What is the maximum number of buckets examined in an unsuccessful search?
   (8M+4M+4M)

4. a) Show the result of inserting 3 , 1 , 4 , 6 , 9 , 2 , 5 , 7 into an initially empty AVL tree?
   b) Show the result after each insertion? Also show the result after deletion of the root?
   (8M+8M)

5. a) Explain about Binomial Amortized Analysis?
   b) Explain about binomial queue? (8M+8M)

6. a) Write and explain Floyd's algorithm?
   b) Sort the following elements using quick sort
   20,10,5,30,40,57, 35, 25,18,22,21 (8M+8M)

7. a) List the advantages and disadvantages of Tries.
   b) Discuss about fixed field buffers? (8M+8M)
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