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

II B. Tech II Semester Supplementary Examinations, Nov/Dec-2016
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) Differentiate between double Hashing and Rehashing?
   b) What is LR imbalance? How LR imbalance is corrected illustrate with an example?
   c) Create a min-heap and max-heap for the following list (5; 8; 3; 9; 2; 10; 1; 40)
   d) Compare the time complexity of Prim's and Kruskal's algorithm?
   e) Discuss about time complexity of heap sort?
   f) What are the different ways of writing into a file? (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
   20,10,5,30,40,57,35,25,18,22,21. (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) What is a 2-3 tree?
   b) Show the result of inserting **13,11,4,16,19,12,5,7,3,8** into an initially empty 2-3 tree? Show the result after each insertion? Also show the result after deletion of the root? (8M+8M)

5. a) Explain binomial queue operations?
   b) Explain about lazy binomial queue? (8M+8M)

6. a) Write and explain: Dijkstra's Algorithm?
   b) Sort the following elements using radix sorting? Discuss its time complexity
   20,10,5,30,40,57,3,2,4,35,25,18,22,21. (8M+8M)

7. a) Discuss in brief about KMP algorithm with an example?
   b) Explain about record organization? (8M+8M)

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