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

II B. Tech II Semester Supplementary Examinations, April-2018
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) Explain the rehashing methods briefly?
    b) Show that left and right rotations are inverses of each other. What can you say about double rotations?
    c) Discuss about lazy binomial queue?
    d) Which algorithm works with negative edges? Why
    e) Explain about the concept of Lower bound?
    f) Compare binary tree with multi way tree?   (4M+4M+3M+3M+4M+4M)

PART-B

2. Following elements are inserted into an empty hash table with hash function $f(x) = x\% 13$ and linear probing 112, 44, 52, 45, 37, 278, 89, 28, 61,249
     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)

3. a) What are the different types of imbalances that occur while deleting a node from AVL trees?
    b) How they are rectified? Explain with an example for each type of imbalance?   (8M+8M)

4. a) Write an algorithm to insert an element in max heap? Trace the above algorithm for the following elements? 1, 2, 3, 4, 5, 6, 7, 8
    b) While creating the heap for above data will fall in best case or worst case? Justify your answer?   (8M+8M)

5. a) Explain Dijkstra's algorithm with example.
    b) Explain Warshall's algorithm with example.   (8M+8M)

6. a) Discuss about Average Case Complexity of quick Sort?
    b) Explain Radix sorting with an example? Discuss its time complexity?   (8M+8M)

7. a) Draw the flow chart for Boyer-more algorithm.
    b) Discuss about fixed field buffers?   (8M+8M)