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

II B. Tech II Semester Supplementary Examinations, November – 2017
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 Hash function and Hash table? Explain. (4M)
   b) Show, how dictionaries implemented using skip list? (4M)
   c) Differentiate between min heap and max heap with examples? (4M)
   d) Explain, How open hashing differ from closed hashing techniques? (3M)
   e) List out the benefits of trees? (3M)
   f) Discuss about record structure? (4M)

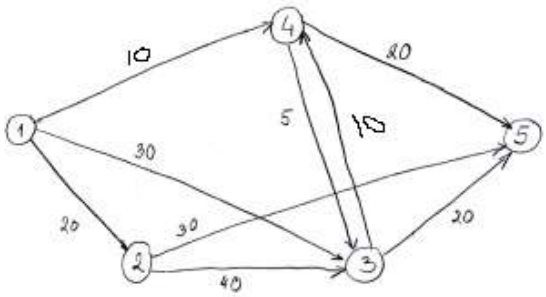
PART -B

2. a) Explain Rotation method in a combination with Folding and pseudorandom hashing method with example. (7M)
   b) Discuss how collision can be resolved using quadratic probing while inserting following keys in Hash table of size 10. (7M)
   97, 40, 15, 22, 17, 89, 67

3. a) Briefly discuss with example how height of the AVL tree is balanced? (7M)
   b) Write Algorithm for 2-3 Tree deletion and discuss its analysis (7M)

4. a) Explain how binary heaps are implemented? Explain with an example. (7M)
   b) Construct a binary heap with the following data 150, 110, 90, 80, 70, 100, 180 (7M)

5. a) Apply Dijkstra algorithm for the following graph (7M)



   b) Write Prim's algorithm? Discuss the analysis of prim's algorithm. (7M)
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6. a) Obtain lower bound on worst case complexity for sorting algorithm. (7M)
   b) Perform heap sort with the following elements (7M)
   84, 62,50, 42, 30, 52, 70

7. a) Illustrate various ways of constructing field structures and record structures. (7M)
   b) Explain working principal of Knuth Morris Pratt algorithm with example. (7M)