

Code No: RT22053

**R13**
**SET - 1**

**II B. Tech II Semester Supplementary Examinations, November - 2018**  
**ADVANCED DATA STRUCTURES**  
**(Com. to CSE, IT)**

Time: 3 hours

Max. Marks: 70

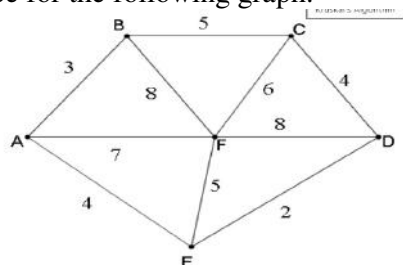
- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)  
 2. Answer **ALL** the question in **Part-A**  
 3. Answer any **THREE** Questions from **Part-B**

**PART -A**

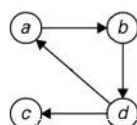
1. a) Define ADT of dictionary? (3M)
- b) Which binary tree we call it as “almost complete binary tree”? Explain? (4M)
- c) What is Binary heap? (4M)
- d) Compare double hashing techniques with linear and quadratic probing? (4M)
- e) Explain, how tries differ from hash tables? (3M)
- f) Discuss various operation on files (4M)

**PART -B**

2. a) Why rehashing is needed? What are the types of rehashing techniques available? Explain any one technique with examples? (7M)
- b) Explain how data is inserted and deleted from dictionaries while it is implemented using list data structure ? (7M)
3. a) Explain three possible cases for inserting a node in the 2-3 Trees? Construct 2-3 Tree with the following data 50, 20, 60, 90, 40, 100, 10 (7M)
- b) Write Algorithm for 2-3 Tree deletion and discuss its analysis. (7M)
4. a) (i) Define Binomial queue, Binomial tree and Binomial heap? (7M)
- (ii) Explain the properties of Binomial trees? (7M)
- b) Show step by step process for constructing binary heap using the following data 10, 12, 1, 14, 6, 5, 8, 15, 3, 9, 7, 4, 11, 13 and 2. (7M)
5. a) Solve the following by apply kruskal's algorithm to find minimum cost spanning tree for the following graph. (7M)



- b) Find the transitive closure for the following diagram using Warshall's algorithm? (7M)



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6. a) Perform Quick sort with the following elements: (7M)  
400,200, 100, 750, 500, 150,300, 600
- b) Give the algorithm for Radix sort and explain the process with an example? (7M)
7. a) Illustrate Boyers Moore algorithm with the following text and pattern? (7M)
- Text : A A B A A C A A D A A B A A B A
- Pattern : A A B A
- b) Discuss the following: (7M)
- (i) Digital search trees
  - (ii) Binary tries