

Code: 17CSCS1T1

I M.Tech - I Semester - Regular Examinations - February 2018

DATA STRUCTURES AND ALGORITHMS
(COMPUTER SCIENCE & ENGINEERING)

Duration: 3 hours

Max Marks: 60

Answer the following questions.

1. a) Explain asymptotic notations to represent Big Oh, Omega and Theta notations with suitable examples. 9 M
b) Explain polynomial v/s exponential algorithms. 6 M
(OR)
2. a) What is a list? Write an algorithm to delete elements at any position from DLL. 10 M
b) Differentiate between array and a list. 5 M
3. a) Explain extendable hashing with an example. 8 M
b) What is an ADT? Implement Dictionary as an ADT. 7 M
(OR)
4. a) Explain collision resolution techniques in hashing. 8 M
b) Explain separate chaining and open addressing. 7 M

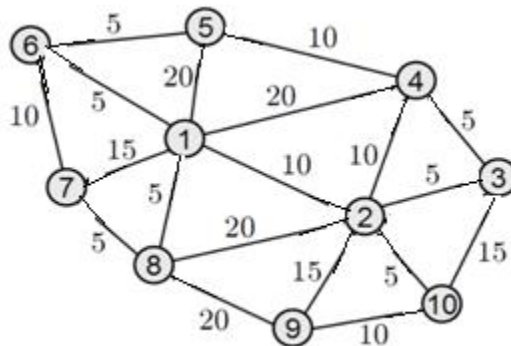
5. a) Explain deletion in an AVL search tree. 10 M
 b) Differentiate between AVL and B trees. 5 M

(OR)

6. What is a B-tree? Explain insertion and deletion process into a B-tree with the help of an example. 15 M

7. Use the following undirected graph and perform the following with start node '1' 15 M

- a) Minimal Spanning tree using Kruskal's algorithm
 b) Traverse the graph in BFS
 c) Traverse the graph in DFS



(OR)

8. Using the following graph to find the shortest path between 'a' to 'h' nodes using Dijkstra's algorithm. 15 M

