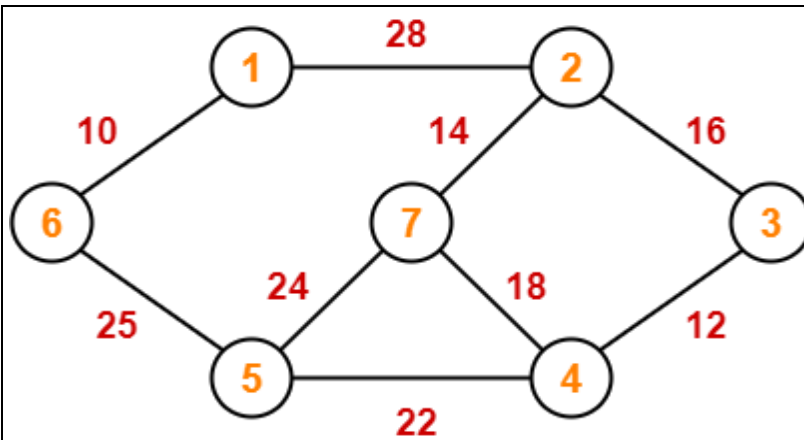
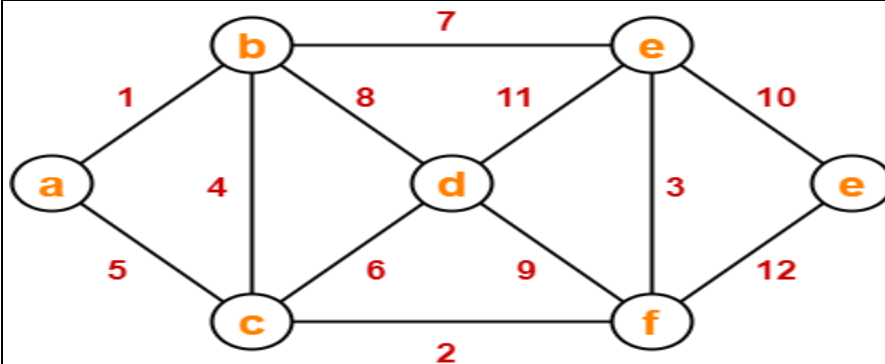


CAT-2
(8 marks ques)
(TREES)
1. Write short notes on:-
i. Binomial heaps
ii. Fibonacci heaps
2. Explain the tree traversal techniques with an example.
3 .Construct an expression tree for the expression $(a+b*c) + ((d*e+f)*g)$. Give the outputs when you apply inorder, preorder and postorder traversals.
4. How to insert and delete an element into a binary search tree and write down the code for the insertion routine with an example.
5. What are threaded binary tree? Write an algorithm for inserting a node in a threaded binary tree.
6. Create a binary search tree for the following numbers start from an empty binary search tree.
45,26,10,60,70,30,40 Delete keys 10,60 and 45 one after the other and show the trees at each stage
UNIT-2
(GRAPHS)
1. Explain Shortest Path algorithm: Dijkstra Algorithm.
2. a) Explain prims algorithm along with its implementation.
b) Construct the minimum spanning tree (MST) for the given graph using prims algorithm.



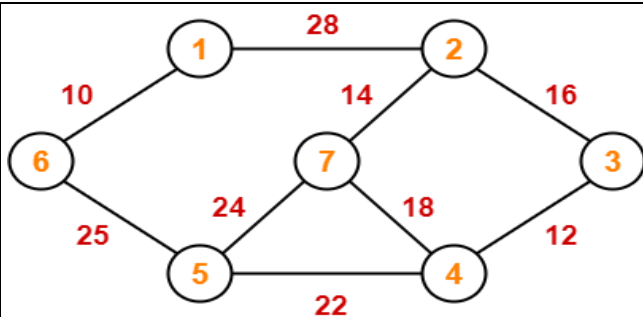
3.a) Explain Prim's Algorithm along with its implementation.

b) Using Prim's Algorithm, find the cost of minimum spanning tree (MST) of the given graph-



4.a) Explain Kruskal algorithm along with its implementation.

b) Construct the minimum spanning tree (MST) for the given graph using Kruskal's Algorithm.



5 MARKS QUESTIONS

UNIT-3

1. Explain the logic behind using “Threaded binary tree” in Data Structures. Draw a labelled diagram to show working of threaded binary tree.

2. Describe Binary Tree along with its representation. How will you search an element in Binary Tree. Explain.

3. The Inorder and Preorder Traversal of a Tree are given below:-

INORDER: DBMINEAFCJGK

PREORDER: ABDEIMNCGJK

i) Construct the corresponding Binary Tree.

ii) Determine Post order Traversal of the Tree drawn.

4. Explain the following:-

i) Binary Tree & Binary Search Tree

ii) Complete Binary Tree

UNIT-4

1. Write Kruskal’s Algorithm for finding Minimum Spanning Tree.

2. Outline the distinguishing features of Depth First Search (DFS) and Breadth First Search (BFS)

in context of graphs.

3. Explain Adjacency Matrix with the help of suitable diagram.

4. How will you detect a cycle in a Directed as well as Undirected graph. Explain with help of an example.

2 MARKS QUESTIONS

UNIT 3

1. What are various representation of Binary Tree.

2. Write Advantages of Threaded Binary Tree.

3. Define Leaf.

4. What is Ordered Tree.

2 MARKS QUESTIONS

UNIT-4

1. Define Graph. List Any 3 application area of Graph.

2. Define OutDegree of Graph.

3. Define Undirected Graph.

4. Define Adjacent Nodes.