

S. **Note:** Start answer of a fresh question from fresh page only. Direct answer to a question No. will not be entertained.

course
outcome
(CO)
CO301.3

1. Discuss spanning tree. Find all spanning tree for the following network graph.

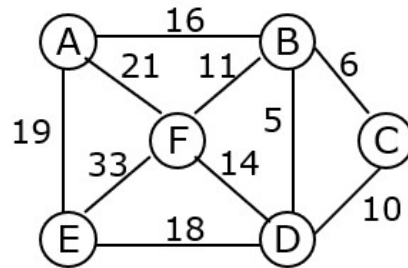


Figure 1. Network Graph

2. What is minimum spanning tree (MST)? Discuss the following basic algorithms which are used to find minimum spanning for the graph shown in Figure 2.
 - (a) Kruskal's Algorithm
 - (b) Prim's Algorithm
3. (a) Consider the following undirected graph and find the MST using the Kruskal's and Prim's Algorithms. Show each step of derivation clearly.

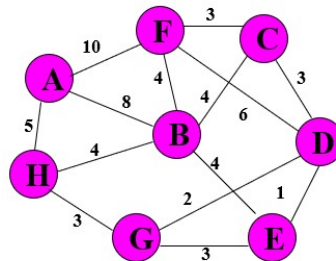


Figure 2.

Network Graph

4. List at least 10 real life problems which can be solved using graphs.
5. What is depth-first search (DFS) algorithm. Discuss. Find all the paths reachable from **a** using DFS for the graph shown in Figure 3

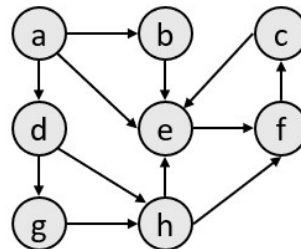


Figure 3. Network Graph

6. What is breadth-first search (DFS) algorithm. Discuss. Find all the paths reachable from **a** using BFS for the graph shown in Figure 3.
7. Find Adjacency Matrix and Adjacency List for the Graph shown in Figure 1.

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