2024

COMPUTER SCIENCE — HONOURS — PRACTICAL

Paper : CC-9P

(Algorithms Lab)

Full Marks : 30

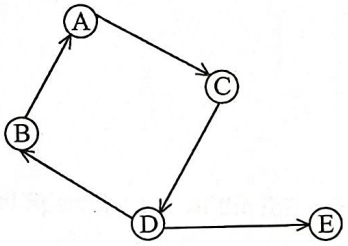
Set - 1

Answer ***any one*** question.

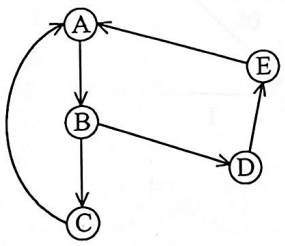
Marks Distribution :

Source Code	:	10
Algorithm	:	5
Output	:	5
Sessional	:	4
Viva-voce	:	6

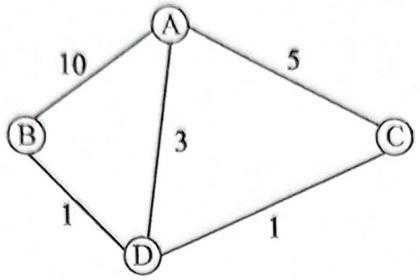
1. Write a C program to traverse the graph given below using BFS algorithm. Start from node A.



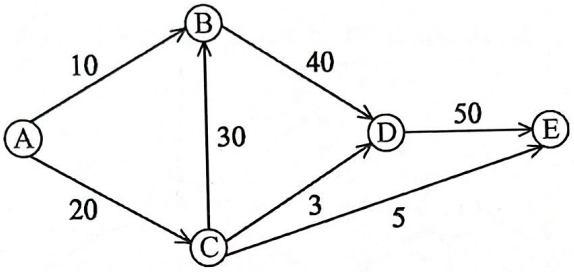
2. Write a C program to traverse the graph given below using DFS algorithm. Start from node A.



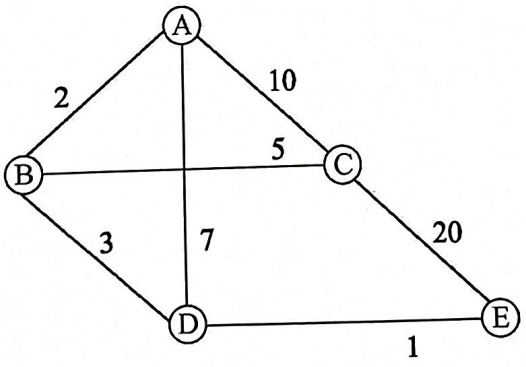
3. Write a C program to find all pair of shortest in the graph given below using Floyd-Warshall algorithm.



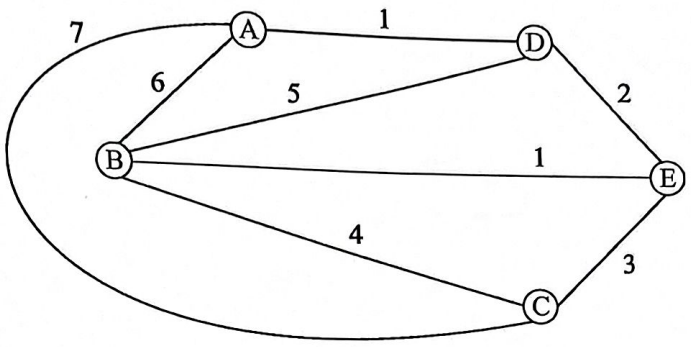
4. Write a C program to find the shortest path between the vertices A and E in the graph given below.



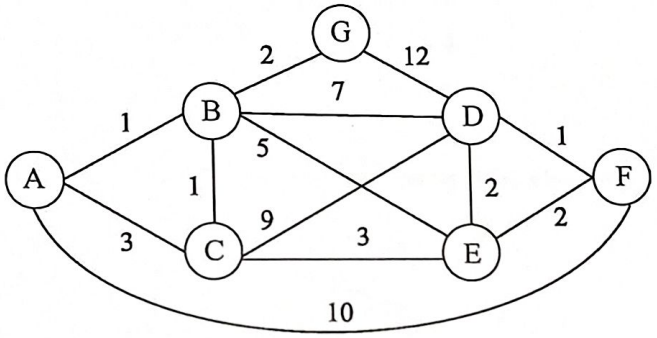
5. Write a C program to find the minimal Spanning tree of the following graph and print the minimum cost (weight) using Prim's algorithm.



6. Write a C program to find the Minimal Spanning Tree of the following graph using Kruskal's algorithm.



7. Find out the minimum cost spanning tree of the given graph using Prim's algorithm.



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Paper : CC-9P

(Algorithms Lab)

Full Marks : 30

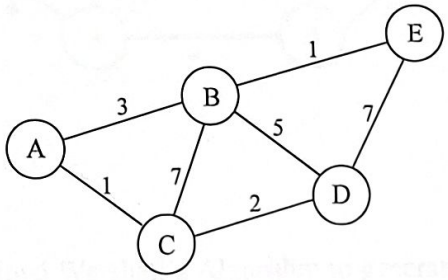
Set - 2

Answer ***any one*** question.

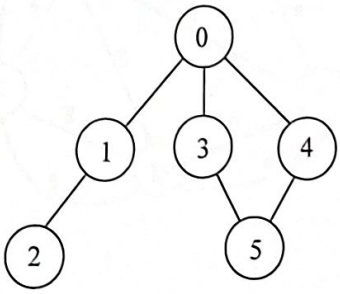
Marks Distribution :

Source Code	:	10
Algorithm	:	5
Output	:	5
Sessional	:	4
Viva-voce	:	6

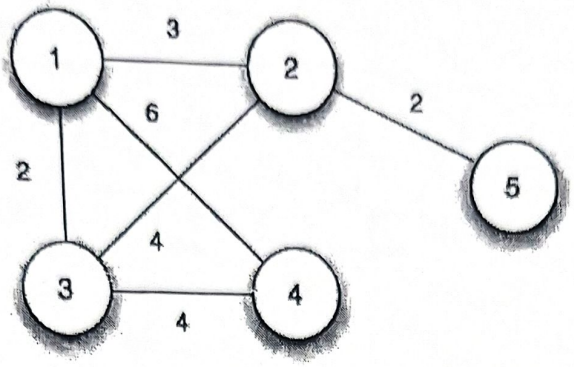
1. Write a C program to find out the minimum cost path from vertex 'A' to vertex 'D' using Dijkstra's algorithm.



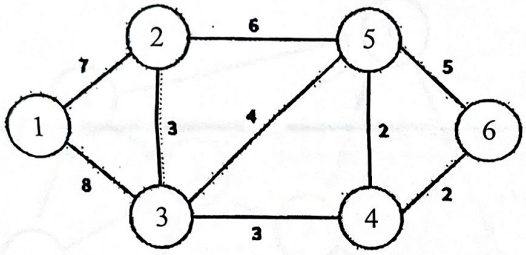
2. Write a C program to traverse the following graph using BFS starting from node 0.



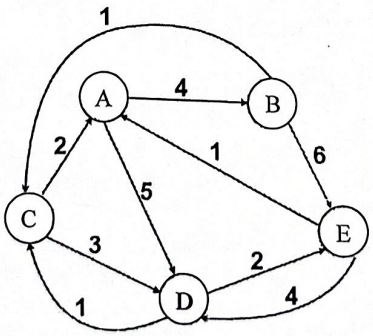
3. Write a C program to find Minimal Spanning Tree of the following graph using Prim's algorithm.



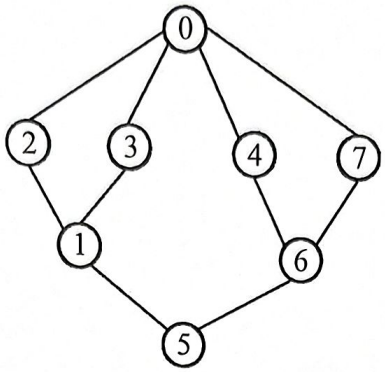
4. Write a C program to find the Minimal Spanning Tree of the following graph using Kruskal's algorithm.



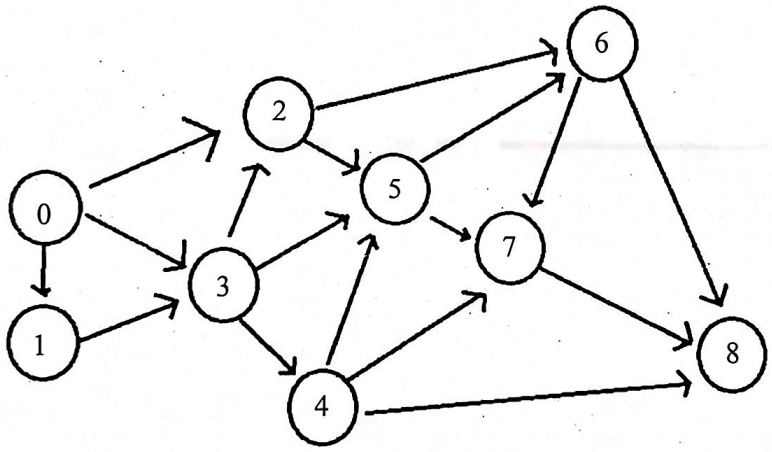
5. Write a C program and apply Floyd Warshall's Algorithm to generate all possible shortest paths among all pairs of two vertices on the graph given below.



6. Write a C program to apply DFS algorithm on the following graph starting from node 0.



7. Write a program in C to traverse vertices of the graph using Depth First Search.



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Paper : CC-9P

(Algorithms Lab)

Full Marks : 30

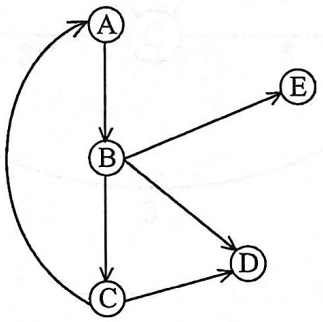
Set - 3

Answer ***any one*** question.

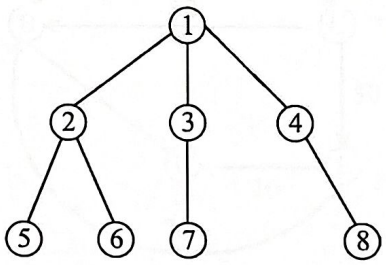
Marks Distribution :

Source Code	:	10
Algorithm	:	5
Output	:	5
Sessional	:	6
Viva-voce	:	4

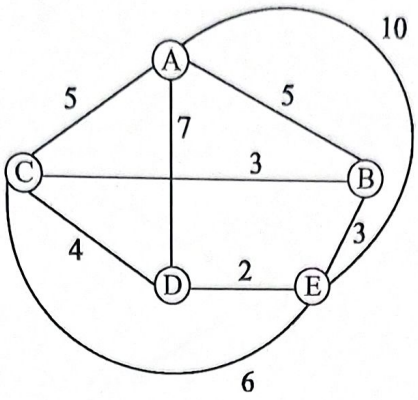
1. Write a C program to traverse the graph given below using DFS algorithm. Start from node C.



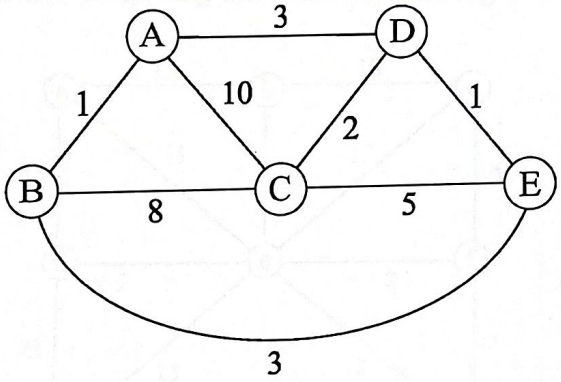
2. Write a C program to traverse the graph given below using BFS algorithm. Start from node 1.



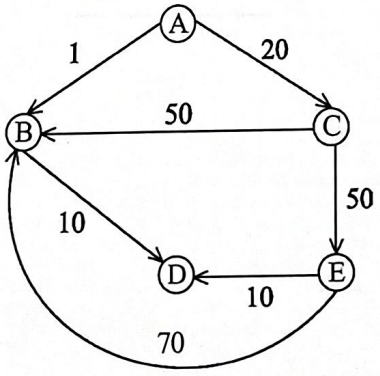
3. Write a C program to find the Minimal Spanning Tree of the graph given below using Kruskal's algorithm.



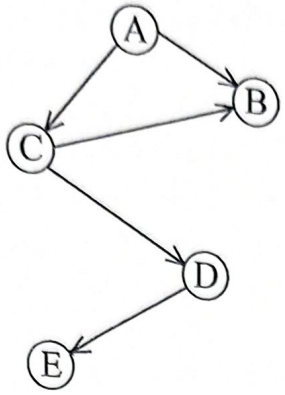
4. Write a C program to find the Minimal Spanning Tree of the following graph and print the minimum cost (weight) using Prim's algorithm.



5. Write a C program to find the shortest path between the vertices A and B in the graph given below.



6. Take as input the graph given below as an adjacency matrix. Now write a function in C that takes the adjacency matrix as the input and outputs incidence matrix representation of the graph.



7. Write a program in C to find out the minimum cost spanning tree using Prim's Algorithm. Output the minimum cost and the vertices comprising the following spanning tree.