

25.KRUSKALS ALGORITHM:-

Code:-

```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
int i,j,k,a,b,u,v,n,ne=1;
int min,mincost=0,cost[9][9],parent[9];
int find(int);
int uni(int,int);
int main()
{
printf("\n\tImplementation of Kruskal's algorithm\n");
printf("\nEnter the no. of vertices:");
scanf("%d",&n);
printf("\nEnter the cost adjacency matrix:\n");
for(i=1;i<=n;i++)
{
for(j=1;j<=n;j++)
{
scanf("%d",&cost[i][j]);
if(cost[i][j]==0)
cost[i][j]=999;
}
}
printf("The edges of Minimum Cost Spanning Tree are\n");
while(ne < n)
{
for(i=1,min=999;i<=n;i++)
{
for(j=1;j <= n;j++)
```

```

{
if(cost[i][j] < min)
{
min=cost[i][j];
a=u=i;
b=v=j;
}
}
}
u=find(u);
v=find(v);
if(uni(u,v))
{
printf("%d edge (%d,%d) =%d\n",ne++,a,b,min);
mincost +=min;
}
cost[a][b]=cost[b][a]=999;
}
printf("\n\tMinimum cost = %d\n",mincost);
getch();
}

int find(int i)
{
while(parent[i])
i=parent[i];
return i;
}

int uni(int i,int j)
{
if(i!=j)

```

```
{  
    parent[j]=i;  
    return 1;  
}  
return 0;  
}
```

OUTPUT:-

```
Implementation of Kruskal's algorithm  
Enter the no. of vertices:2  
Enter the cost adjacency matrix:  
5  
8  
2  
57  
The edges of Minimum Cost Spanning Tree are  
edge (2,1) =32  
  
Minimum cost = 32
```