

**Program:**

```
#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);
void main()
{
    clrscr();
    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:

```

Enter the no. of vertices:7

Enter the cost adjacency matrix:
0 28 0 0 0 10 0
28 0 16 0 0 0 14
0 16 0 12 0 0 0
0 0 12 0 22 0 18
0 0 0 22 0 25 24
10 0 0 0 25 0 0
0 14 0 18 24 0 0
The edges of Minimum Cost Spanning Tree are
1 edge (1,6) =10
2 edge (3,4) =12
3 edge (2,7) =14
4 edge (2,3) =16
5 edge (4,5) =22
6 edge (5,6) =25

Minimum cost = 99

```