```cpp
#include<iostream>
using namespace std;

int n=4;
int dist[10][10] = {
        {0,20,42,25},
        {20,0,30,34},
        {42,30,0,10},
        {25,34,10,0}
};

void print(){
    printf("GIVEN MATRIX IS: \n\n");
    for(int i=0;i<4;++i)
    {
        for(int j=0;j<4;++j)
        {
            printf(" %d ",dist[i][j]);
        }
        printf("\n");
    }
}

int VISITED_ALL = (1<<n) -1;
int dp[16][4];

int  tsp(int mask,int pos){
    if(mask==VISITED_ALL)
        return dist[pos][0];

    if(dp[mask][pos]!=-1)
       return dp[mask][pos];

    int ans = INT_MAX;

    for(int city=0;city<n;city++){
        if((mask&(1<<city))==0){
            int newAns = dist[pos][city] + tsp( mask|(1<<city), city);
            ans = min(ans, newAns);
        }
    }
    return dp[mask][pos] = ans;
}

int main(){
    for(int i=0;i<(1<<n);i++){
        for(int j=0;j<n;j++){
            dp[i][j] = -1;
        }
    }
    printf("::::::::::TRAVELLING SALESMAN PROBLEM ::::::::::::::::\n\n");
    print();
    cout<<"\n\nTravelling Saleman Distance is "<<tsp(1,0);

```

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55: return 0;
56: }
57:
58:
```