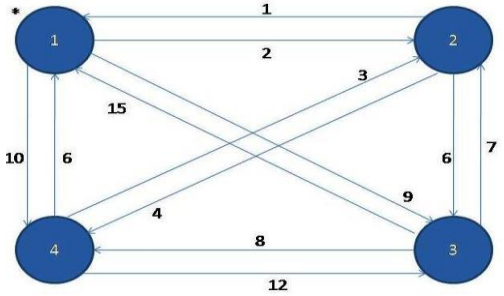
TRAVELLING SALESMAN PROBLEM USING DYNAMIC PROGRAMMING METHOD



COST MATRIX

	1*	2	3	4
1*	0	2	9	10
2	1	0	6	4
3	15	7	0	8
4	6	3	12	0

HOME NODE {1} **TRAVERSING NODES** {2,3,4}

POWER SET OF TRAVERSING NODES

{ϕ, (2), (3), (4), (2,3), (3,4), (4,2), (2,3,4)}

ANSWER

PATH 1->3->4->2->1 **LENGTH** **21**

TIME COMPLEXITY $2^n n^2$

	2	3	4	1 (HOME)
φ	1	15	6	0
{2}	0	c32+c21=7+1=8	c42+c21=3+1=4	0
{3}	c23+c31=6+15=21	0	c43+c31=12+15=27	0
{4}	c24+c41=4+6=10	c34+c41=8+6=14	0	0
{2,3}	0	0	c42+g(2,{3})=3+21=24 c43+g(3,{2})=12+8=20 min = 20	0
{3,4}	c23+g(3,{4})=6+14=20 c24+g(4,{3})=4+27=31 min = 20	0	0	0
{4,2}	0	c34+g(4,{2})=8+4=12 c32+g(2,{4})=7+10=17 min = 12	0	0
{2,3,4}	0	0	0	c12+g(2,{3,4})=2+20=22 c13+g(3,{2,4})=9+12=21 c14+g(4,{2,3})=10+20=30 min = 21