

1. A travelling salesman plans to visit  $n$  cities. He wishes to visit each city only once, and again arriving back to his home city from where he started. So that the total travelling distance is minimum.

Consider the following traveling salesman problem. Design a tour to five cities to the salesman such that minimize the total distance. Distance between cities is shown in the following matrix.

	1	2	3	4	5
1	-	10	3	6	9
2	5	-	5	4	2
3	4	6	-	7	8
4	7	1	3	-	4
5	3	2	6	5	-

2. A Travelling salesman has to visit five cities. He wishes to start from a particular city, visit each city once and then return to his starting point. The travelling cost (in Rs.) of each city from a particular city is given below.

		<b>To city</b>				
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
<b>From city</b>	<b>A</b>	$a$	2	5	7	1
	<b>B</b>	6	$a$	3	8	2
	<b>C</b>	8	7	$a$	4	7
	<b>D</b>	12	4	6	$a$	5
	<b>E</b>	1	3	2	8	$a$

What should be the sequence of the salesman's visit, so that the cost is minimum?