

**MP-1 TUTORIAL-11**

1. Demonstrate the Assignment problem using Hungarian method.

**QUESTION:**

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Hungarian Method

	I	II	III	IV
A	8	26	17	11
B	13	28	4	26
C	38	19	18	15
D	19	26	24	10

**ANSWER:**Step-1 Row - Minima Subtraction

	I	II	III	IV
A	0	18	9	3
B	9	24	0	22
C	23	4	3	0
D	9	16	14	0

Step-2 Column minima subtraction

	I	II	III	IV
A	0	14	9	3
B	9	20	0	22
C	23	0	3	0
D	9	12	14	0

Step-3 Assignment in Rows

	I	II	III	IV
A	<span style="border: 1px solid black;">0</span>	14	9	3
B	9	20	<span style="border: 1px solid black;">0</span>	22
C	3	0	3	<del>0</del>
D	9	12	14	<span style="border: 1px solid black;">0</span>

step-4 Assignment in column

	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
A	<u>0</u>	14	9	3
B	9	20	<u>0</u>	22
C	23	<u>0</u>	3	<del>1</del>
D	9	12	14	<u>0</u>

step-5 (Draw Minimum lines)

- In each row only one Assignment is done
- In each column only one Assignment is done.
- All jobs are assigned, all persons are Assigned
- we have reached to optimal solution.

Assignments of Jobs

A → I , B → III , C → II , D → IV

Minimum no. of hours

$$= 8 + 4 + 19 + 10 = 31 \text{ hours}$$