

Ans 6

Some assignment Problems

machine

	10	12	17	11
Jobs	5	10	7	8
	12	14	13	11
	8	15	11	9

Let Row denoted by A, B, C, D  
& Column by I, II, III, IV

① Row reduction - select the smallest element in each row and subtract it from every element of that particular row.

	A	B	C	D
I	0	2	9	1
II	0	5	2	3
III	1	3	2	0
IV	0	7	3	1

② Column reduction - Select smallest value and subtract it from every element in column.



Table II (initial matrix)

	A	B	C	D
I	0	0	7	1
II	0	3	0	3
III	1	1	0	0
IV	0	5	1	1

Drawn minimum No. of lines (horizontal & vertical) to cover all zeroes.

min no. of lines (N) = No. of rows & columns.  
 $2 \neq 4 \neq 4$

The condition of optimal

Table III

Step 4 | -

	A	B	C	D
I	<del>0</del>	<span style="border: 1px solid black;">0</span>	7	1
II	<del>0</del>	3	<span style="border: 1px solid black;">0</span>	3
III	1	1	<del>0</del>	<span style="border: 1px solid black;">0</span>
IV	<span style="border: 1px solid black;">0</span>	5	1	1



Step - 5 Calculate of min cost

Jobs	machine	
I	A	12
II	B	17
III	C	11
IV	D	8
		<hr/>
		38

total minimum cost is 38.