Assignment – 02

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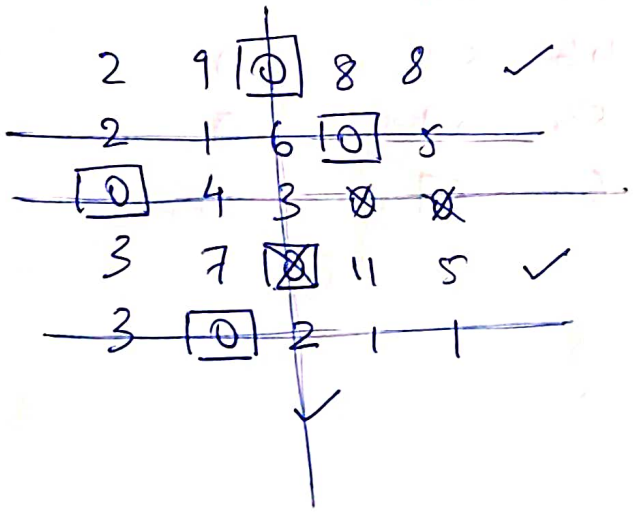
Ans 1)

	A	B	C	D	E
1	11	17	8	16	20
2	9	7	12	6	15
3	13	16	15	12	16
4	21	24	17	28	26
5	14	10	12	11	15

row reduction :–

3	9	0	8	12
3	1	6	0	9
1	4	3	0	4
4	7	0	11	9
4	0	2	1	5

Column reduction :–



0	7	⊗	6	6
2	1	8	0	5
⊗	4	5	⊗	0
1	5	0	9	3
3	0	4	1	1

⇒ Optimal sol^{n} :–

1 → A
2 → D
3 → E
4 → C
5 → B

Ans 2)

Mac. A	Mac. B
3	8
12	10
15	10
6	6
10	12
11	1
9	3

Optimal sequence:

1	4	5	3	2	7	6

Job	M1 in	M1 out	M2 in	M2 out	M1 idle	M2 idle
1	0	3	3	11	0	3
4	3	9	11	17	0	0
5	9	19	19	31	0	2
3	19	34	34	44	0	3
2	34	46	46	56	0	2
7	46	55	56	59	0	0
6	55	66	66	67	0	7

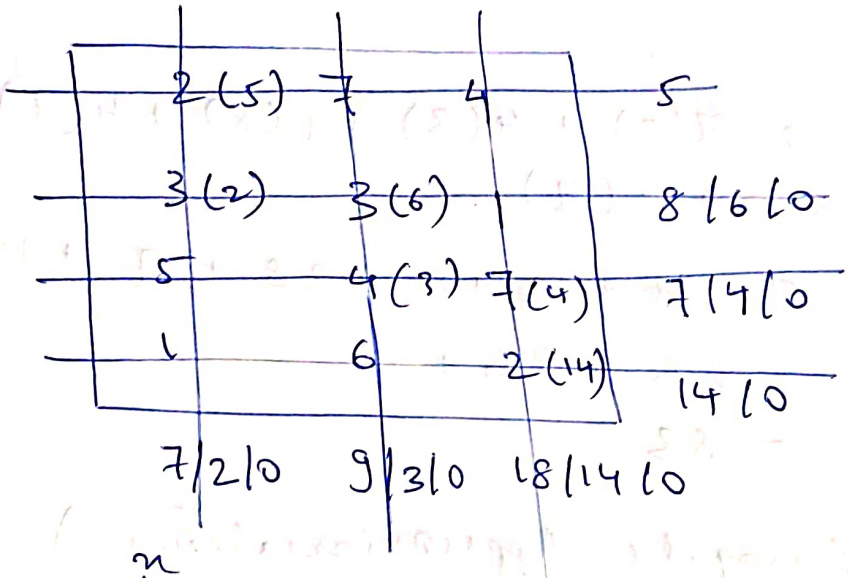
Makespan = 67

M2 idle time = 17

Ans 3)

	A	B	C	supply
1	2	7	4	5
2	3	3	1	8
3	5	4	7	7
4	1	6	2	14
Demand	7	9	18	

NWCR :—



feasible soln = 2(5) + 3(2) + 3(6) + 7(4)
+ 2(14) + 4(3)

= 10 + 6 + 18 + 28 + 28 + 12

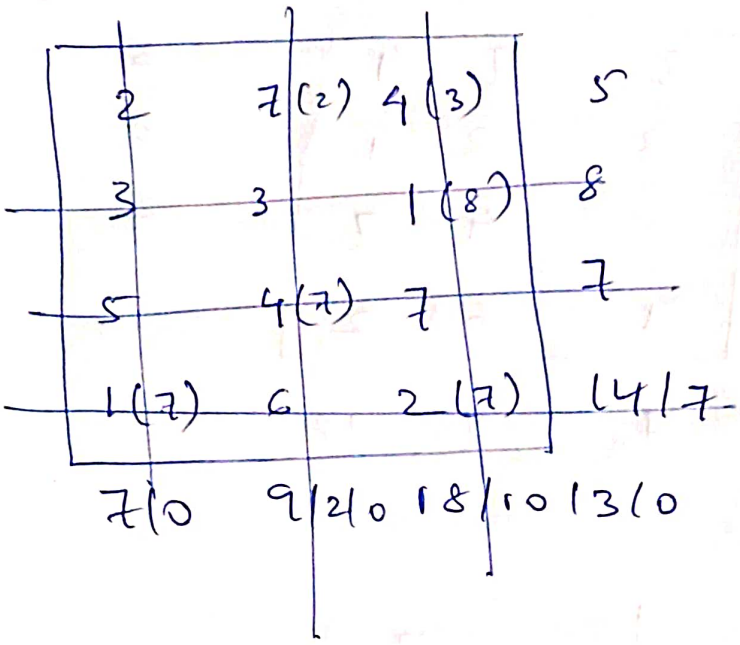
= 34 + 56 + 12

= 90 + 12

= 102

Total cost

Least cost method :—



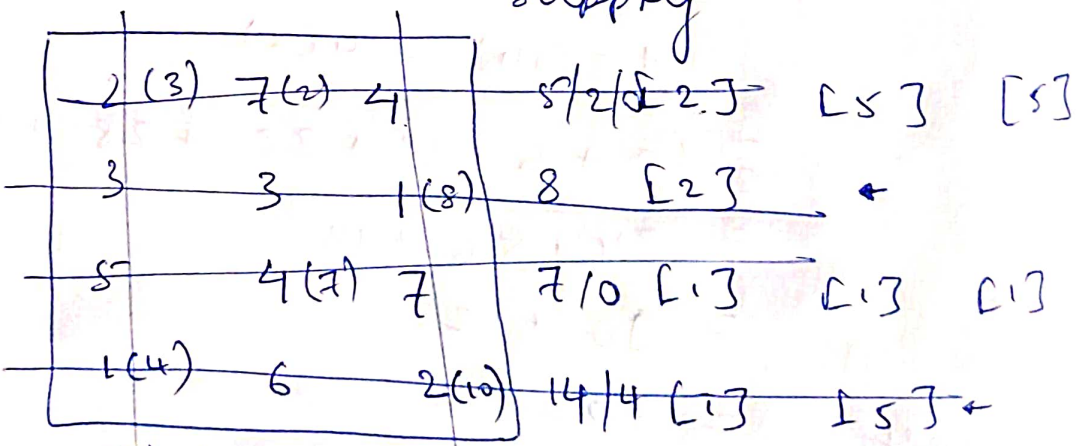
Total cost = 7(2) + 4(3) + 1(8) + 4(7) + 1(7) + 2(7)

= 14 + 12 + 8 + 28 + 7 + 14

= 26 + 36 + 21

= 83

VAM (Vogel's Approximation) :—



Total cost = $2(3) + 7(2) + 1(8) + 4(7) + 1(4) + 2(10)$

$= 6 + 14 + 8 + 28 + 4 + 20$

$= 20 + 8 + 32 + 20$

$= 80$