Q M3 A8

Obtain an initial basic feasible solution to the following transportation problem using the north west corner rule.

	D	E	F	G	Available
A	11	13	17	14	250
B	16	18	14	10	300
C	21	24	13	10	400
Recquirement	200	225	275	250	

Q M3 A9

Obtain an initial basic feasible solution to the following transportation problem using Least cost method

	D1	D2	D3	D4	Capacity
O1	1	2	3	4	6
O2	4	3	2	0	8
O3	0	2	2	1	10
Demand	4	6	8	6	

Q M3 A10

Obtain an initial basic feasible solution to the following transportation problem using Vogels Approximation method

	D	E	F	G	Supply
A	20	25	28	31	200
B	32	28	32	41	180
C	18	35	24	32	110
Demand	150	40	180	170	

Q M3 B1

(a) Determine the optimal transportation cost and quantities to be supplied from different factories to different markets.

OR

(a) Find an assignment programme which will maximise the total profit

Q M3 B2

(a) Solve the following assignment problem so as to minimise the cost

OR

(b)Solve the following transportation problem

Q M3 B3

(a) Find the Assignments of salesman to various districts which will result minimum cost

OR

(b) A company manufacturing air coolers has two plants located at Mumbai and Kolkata with a weekly capacity of 200 units and 100 units ,respectively.The company supplies air coolers to its 4 showrooms situated at Ranchi,Delhi,Lucknow and Kanpur which have a demand of 75,100, 100 and 30 units respectively.The cost of transportation per unit (in Rs) is shown in the table.

	Ranchi	Delhi	Lucknow	Kanpur
Mumbai	90	90	100	100
Kolkata	50	70	130	85

Q M3 B4

(a) Given X13 = 50 units, X14 = 20 units,X21 = 55 units,X31 = 30 units ,X32 = 35 units and X34 = 25 units .Is it an optimal solution to the transportation problem.If not optimal,find the optimal solution.

					Available units
	6	1	9	3	70
	11	5	5	8	55
	10	12	4	7	90
Required units	85	35	50	45	

OR

(b)A departmental head has four subordinates,and four tasks to be performed.The subordinates differ in efficiency and the tasks differ in their intrinsic difficulty.His estimates of the time each man would take to perform each task,is given in the matrix below.

		Man			
Tasks		E	F	G	H
A	...	18	26	17	11
B	...	13	28	14	26
C	...	38	19	18	15
D	...	19	26	24	10

How should the tasks be allocated one to a man ,so as to minimise the total man hours ?

Q M3 B5

(a) Solve the travelling salesman problem for the following table.

From item	To item				
	A	B	C	D	E
A	∞	4	7	3	4
B	4	∞	6	3	4
C	7	6	∞	7	5
D	3	3	7	∞	7
E	4	4	5	7	∞

OR

(b) Solve the transportation problem