

1 Solve following LP Problem Using Simplex Method (7)

$$\text{Max } Z=3X_1+ 2X_2$$

$$\text{Subject to } x_1 + x_2 \leq 4$$

$$x_1 - x_2 \leq 2 \text{ and } x_1, x_2 \geq 0$$

2 Write the Algorithm Steps for simplex Method (7)

Q-3 Attempt all questions (14)

1 Apply MODI method and obtain basic feasible solution by VAM (7)

	I	II	III	IV	Supply
A	5	2	4	3	22
B	4	8	1	6	15
C	4	6	7	5	8
Requirement	7	12	17	9	

2 Find Initial Solution Using NWCM,LCM, & VAM Method (7)

	D1	D2	D3	D4	Supply
S1	19	30	50	10	7
S2	70	30	40	60	9
S3	40	8	70	20	18
Demand	5	8	7	14	34

OR

Q-3 1 Five Men are available to different five jobs find assignment the minimize the total time (7)

Job Men	I	II	III	IV	V
A	2	9	2	7	1
B	6	8	7	6	1
C	4	6	5	3	1
D	4	2	7	3	1
E	5	3	9	5	1

2 Write Advantage and disadvantages of Linear Programming (7)

SECTION-II

Q-4 Attempt the Following questions (7)

- 1 What is Feasible Solution? (1)
- 2 Write the full form of PERT& CPM (2)
- 3 What is Decision variables & objective Function (2)
- 4 Full Form of AOA & AON (2)



- Q-5** **Attempt all questions** (14)
 1 Obtain the optimal feasible solution by MODI Method (7)

	W1	W2	W3	Supply
F1	16	20	12	200
F2	14	8	18	160
F3	26	24	16	90
Demand	180	120	150	

Initial Basic Feasible Solution obtained by

NWCM.

- 2 Describe the transportation problem with its general mathematical formulation (7)

OR

- Q-5** 1 Give the mathematical formulation of an assignment problem. (7)

- 2 (7)

Man \ Job	I	II	III	IV	V
A	10	5	13	15	16
B	3	9	18	13	6
C	10	7	2	2	2
D	7	11	9	7	12
E	7	9	10	4	12

Department of company has five job with five man find total man hours to minimize the total time.

- Q-6** **Attempt all questions** (14)
 1 A Research and development department break up is as follows (7)

Job	Immediate Predecessor	Time (Days)	Job	Immediate Predecessor	Time (Days)
A	---	5	F	D	2
B	A	7	G	C	1
C	B	2	H	E,F	3
D	B	3	I	G,H	10
E	C	1			

(1) Draw

the arrow diagram.

(2) Identify the critical path and find the total project duration.

- 2 Explain events and Activities with suitable example. (7)



OR

Q-6

Attempt all Questions

1

Following table is given calculate the total estimation time, critical path, total and free float for each non critical activity.

(7)

Activity	Duration	Predecessor	Activity	Duration	Predecessor
A	6	--	G	2	--
B	4	A	H	10	G
C	7	B	I	6	J,H
D	2	A	J	13	--
E	4	D	K	9	A
F	10	E	L	3	C,K
			M	5	I,L

2

Discuss Errors and Dummies in Network.

(7)

