RAN-2103000206030015

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T. Y. B. Sc.(Sem. - VI) Examination April - 2023

Operation Research- II (EG - Mathematics - 6001)

[Total Marks: 50

સૂચના : / Instructions

(1) **નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.**
Fill up strictly the details of ☛ signs on your answer book

Name of the Examination:

☛ **T. Y. B. Sc.(Sem. - VI)**

Name of the Subject :

☛ **Operation Research- II (EG - Mathematics - 6001)**

Subject Code No.: **2103000206030015**

Seat No.:

Student's Signature

(2) All Questions are compulsory.

(3) Figures to the right indicate marks of the corresponding question.

SET - 2

Q. 1. (a) **Attempt any two :** **06**

1. Write the Mathematical model of Transportation Problem.

2. Solve the following Assignment Problem:

120	100	80
80	90	100
110	140	120

3. Explain: Fair Game, Strictly determinable Game.

Q. 1. (b) **Attempt any one :** **04**

1. Solve the game with the following payoff matrix:

Player A	**Player B**	
	B_1	B_2
A_1	1	2
A_2	4	– 3

2. Consider the game with following payoff matrix, Determine the value of the game.

Player A	Player B	
	B_1	B_2
A_1	2	3
A_2	5	– 4

Q. 2. Attempt any two : **20**

1. Find initial basic feasible solution using Least Cost Method and North West Corner Method:

	P	Q	R	S	Supply
A	2	3	11	7	6
B	1	0	6	1	1
C	5	8	15	9	10
Demand	7	5	3	2	

2. Find optimal solution for the following Transportation Problem:

	P	Q	R	S	T	Supply
A	4	2	3	2	6	8
B	5	4	5	2	1	12
C	6	5	4	7	7	14
Demand	4	4	6	8	8	

3. Find initial basic feasible solution using MODI method:

	1	2	3	4	Supply
A	2	4	6	11	50
B	10	8	7	5	70
C	13	3	9	12	30
D	4	6	8	12	50
Demand	25	35	105	20	

4. Determine the value of the game using graphical method:

Player A	Player B	
	B_1	B_2
A_1	1	– 3
A_2	3	5
A_3	– 1	6
A_4	4	1
A_5	2	2
A_6	– 5	0

Q. 3. Attempt any two : **20**

1. Solve the following Assignment Problem:

	1	2	3	4	5
A	41	72	39	52	25
B	22	29	49	65	81
C	27	39	60	51	40
D	45	50	48	52	37
E	29	40	45	26	30

2. Use dominance rule to solve the following game and determine the value of the game:

Player A	Player B			
	B_1	B_2	B_3	B_4
A_1	2	– 2	4	1
A_2	6	1	12	3
A_3	– 3	2	0	6
A_4	2	– 3	7	6

3. Solve the following Assignment Problem:

	1	2	3	4
A	9	14	19	15
B	7	17	20	19
C	9	18	21	18
D	10	12	18	19
E	10	15	21	16

4. Solve the following game matrix using Graphical method:

Player A	Player B	
	B_1	B_2
A_1	– 6	7
A_2	4	– 5
A_3	– 1	– 2
A_4	– 2	5
A_5	7	– 6