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W-2962(A)

B.B.A. (Sixth Semester) Examination, (Second Chance) June-2020

OPERATION RESEARCH

Paper - 602

Time : Three Hours

Maximum Marks : 40

Minimum Pass Marks : 16

Note : Attempt **all** questions.

Q.1. What do you mean by OR? Explain its various techniques.

Q.2. Solve this linear equation

Minimize $f = 32x + 12y$ subject to the constrains

$4x + 3y \geq 6$

$8x + 2y \geq 5$

with x and y nonnegative.

Q.3. Find the initial feasible solution by Vogel's approximation method.

	W_1	W_2	W_3	Supplies
F_1	48	60	56	140
F_2	45	55	53	260
F_3	50	65	60	360
F_4	52	64	55	220
Demand	200	320	250	

(Note) Cells entries are the unit transportation cost.

Q.4. A decision matrix with cost data is given below:

	States of Nature			
Alternatives	S_1	S_2	S_3	S_4
a_1	1	3	8	5
a_2	2	5	4	7
a_3	4	6	6	3
a_4	6	8	3	5

Find best alternative using

i) Mini-max criterion

ii) Mini-mini criterion

iii) Mini-max regret criterion

Q.5. Twenty sheets of paper were examined at random, they contained respectively 5, 7, 8, 3, 2, 4, 0, 7, 1, 12, 6, 15, 12, 18, 10, 6, 5, 7, 3, 9 blemishes (defects) without preparing a chart ascertain whether the process is in a state of statistical control.