

1	Define operation research Definition ,nature and scope applications
	OR
	Graphically solve the following LPP , Maximize $Z=10x_1+6x_2$ Subjected to constraint $5x_1+3x_2\leq 30$ $x_1+2x_2\leq 18$ $x_1,x_2\geq 0$
2	a) What do you mean by LPP ? What are its limitations? Use penalty (or Big -M) Solve the

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	following LPP using Big -M method to maximize Max $Z= -3x_1-x_2$ Subjected to constraint $2x_1+x_2\geq 2$ $x_1+3x_2\leq 3$ $x_2\leq 4$ $x_1,x_2\geq 0$
	OR
	b) solve the following LPP max $Z= x_1+5x_2$ subjected to $3x_1+4x_2\geq 240$ $5x_1+3x_2\leq 150$ $x_1,x_2\geq 0$

3

a) Determine an initial basic feasible solution to the following transportation problem using northwest corner cell method

	1	2	3	4	Availability
1	5	3	6	2	19
2	4	7	9	1	37
3	3	4	7	5	34
Demand	16	18	31	25	90/90

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OR

b) Determine an initial basic feasible solution to the following transportation problem using Northwest corner cell method

	1	2	3	4	5	Availability
1	3	4	6	8	9	20
2	2	10	1	5	8	30
3	7	11	20	40	3	15
4	2	1	9	14	1 6	13
Demand	40	6	8	18	6	

1	<p>a) Solve the following LPP using simplex method</p> <p>Max <math>Z=6x_1+8x_2</math></p> <p>Subjected to constraint</p> <p><math>5x_1+10x_2 \leq 60</math></p> <p><math>4x_1+4x_2 \leq 40</math></p> <p><math>x_1, x_2 \geq 0</math></p>	L1	
	OR		

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	<p>b) Graphically solve the following LPP ,</p> <p>Maximize <math>Z=10x_1+6x_2</math></p> <p>Subjected to constraint</p> <p><math>5x_1+3x_2 \leq 30</math></p> <p><math>x_1+2x_2 \leq 18</math></p> <p><math>x_1, x_2 \geq 0</math></p>	L2	
2	<p>a) Define operation research Definition ,nature and scope applications</p>	L1	
	OR		
	<p>What do you mean by LPP ? What are its limitations? Use penalty (or Big -M) Solve the following LPP using Big -M method to maximize</p> <p>Max <math>Z= -3x_1-x_2</math></p> <p>Subjected to constraint</p> <p><math>2x_1+x_2 \geq 2</math></p> <p><math>x_1+3x_2 \leq 3</math></p> <p><math>x_2 \leq 4</math></p> <p><math>x_1, x_2 \geq 0</math></p>	L3	