CA 8.3 Optimization Algorithm

Credit - 1st

Date:- 21/04/2021 Time:- 11 AM to 12 PM

Marks - 20

Q.1) What is OR ? Write down the apptications of OR techniques? (5M)

Q.2) Solve following example using graphical method (5M)

Maximum Profit (P) : $4000x + 5000y$

Subject to -

$5x + 4y \leq 200$

$3x + 5y \leq 150$

$5x + 4y \geq 100$

$8x + 4y \geq 80$

$x, y \geq 0$

Q.3) Solve following TP using VAM method (5M)

		Destination 1	2	3	4	Supply
Source	1	3	1	7	4	300
	2	2	6	5	9	400
	3	8	3	3	2	500
Demand		250	350	400	200	1200

Q4. A company manufactures 2 different types of products P1 and P2. Each product requires processing on milling machine and drilling machine. But each type of machines has limited hours available per week; giving in table. — (5M)

Machine type	Processing time (hours)		Machine hours available per week
	Product P1	Product P2	
Milling machine	2	5	200
Drilling machine	4	2	240
Profit/unit (Rs)	250	400	

Develop a LP model to determine the optimal production volume of each of the products.

(OR)

(5M)

Q.5 What is Linear Programming?
What are the advantages of LP?