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Program	BS (SE)
section	B
subject	operation Research
class timing	wednesday (8:00 to 11:00)

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Q1 = Ans 01

Ans: A company produces of products P_1, P_2 and line required.

Production	Progess	Finishing
P_1	12	03
P_2	06	08
P_3	08	06
company capacity	3000	1500

Now convert into liner P_2

$12x_1 + 6x_2 + 8x_3 \leq 3000$

$3x_1 + 8x + 6x_3 \leq 15$

Maximim z = $1000x_1 + 800x_2 + 4$

Now first x_1 intercep

put $x_2 = 0$ and $x_3 - 6$

$12x_1 + 6x_2 + 8x_3 = 300$

put $x_1 = 0$ and $x_2 = 1$

$12x_1 = 6(0) + 8(0) = 3000$

$x_1 = \frac{3000}{12}$ 250

P_1 (25000,0)

Now for x_1 intercept.

Put $x_1 = 0$, $x_2 = 0$

$12x_1 + 6x_2 + 8x_3 = 3000$

$12(0) + 6x_2 + 8(0) = 3000$

$x_2 = \frac{3000}{6} = 500$

$P_2 = (0, 500, 0)$

Now for x_3 intercept put

$x_1 = 0$ and $x_2 = 0$

$3x_1 + 8x_2 + 6x_3 = 1500$

$3(0) + 8(0) + 6x_3 = 1500$

$x_2 = \frac{1500}{6} = 250$

$P_3 = (0, 0, 250)$

thus all parth put in eq(2) to find the maximum value

$Z = 1000x_1 + 800x_2 + 400x_3$

$Z = 1000(250) + 0 + 0 = 250000$

$Z = 1000 + 800(500) + 0 = 40000$

$Z = 0 + 0 + 400(375) = 150000$

$Z = 1000(500) + 0 + 0 = 500000$

$Z = 0 + 800(187.5) + 0 = 150000$

$Z = 0 + 0 + 400(250) = 100800$

Ans.

Q2 = Ans 02

Ans = 2 =· Suppose x_1 and x_2 be the number of production of a A and B, since allowed de-under utilization of product capacity possible.

Since goal is the minimization of sales hence positive devation will not appear in cossalunts related with sales so =

$x_1 + d_2 = 150$

$x_2 + d_3 = 200$

=> d_2 = under achievement of solve goals products A.

=> d_3 under achievement of solve products B.

Now the goal programming mathematical modes can be minimized.

$Z = P_1 d_1 + P_2 d_3 + P_3 d_r$

(4)

Subjected to constraints:

$x_1 + x_2 + d_1 - d_1 = 500$

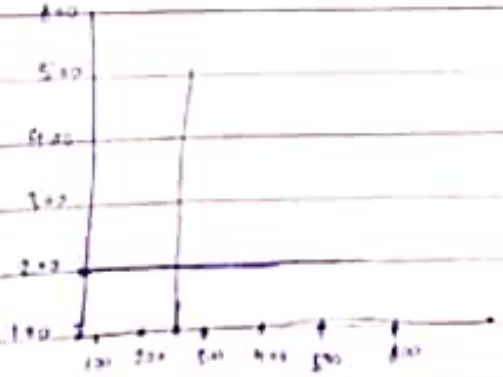
$x_1 + d_2 = 150$

$x_2 + d_3 = 200$

& ~~$x_1, x_2, 0$~~

& $x_1, x_2, d_1, d_2, d_3, d_1 \geq 0$

All the goal constraints can be plotted on the graph.



Product A as for product B because the profit from the sale of product is the amount from that of product B.

Q3 = Ans 03

Ans Introduction: Critical path methology is a programming methodology that with replaced all of the various inlevitions.

~~common~~

Commmunication and defects the critical path method is an algorithams for scheduling a set of projects altitles its an commonly used in conjection with the program evlution and Review technological.

* Reasearch hypothesis:- This ~~the~~ study used one Rule among many simple algorithm rules to simulate the calculation of the longest paths therefor ~~the~~ minimization ammount of time required to performed an activity from the dragonety algoritharms and that the result can be examined.

* Literature Review:

explaing cpm to calculate the forme requires and values required for projects and events ~~am~~ cpm is used is oppeis values and time interchanges by activities that that a shorter time at in expence.

* CPM simulation:

CPM analyes the earalist begum time the consised and time. Fee the itfest it lest end time retio frequancy and total float TF should be docemessted for each activity.

* Research methedology

The study ulitiae the dyramic and static group behaviour of dragnthes in raduie to at ablain and dragmthes algorimtham the benifets of the approch are to use dragry behavious to achieve

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* **Result:-** separation from each other si to avoid the drogroth from atatic cullosion with others follow human coordination and dignment as as the dropofyis behause to match speed with other other follow human.

* **Conclusion:-** The dragrmgy rule is successful invited to optimized the conclusion we have used this technigued to salve the cast duration and activity duration and activity in the required with dragrm.

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