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Section (A)

Department bs(SE)

Subject operation research

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Q1

(1)

A Solution

Production	Time required: Progress	Time required: Finishing	Total amount
P_1	12	03	1000
P_2	06	08	800
P_3	08	06	400
Company capacity	3000	1500	

Now convert into linear programe

$$12x_1 + 6x_2 + 8x_3 \leq 3000$$
$$3x_1 + 8x_2 + 6x_3 \leq 1500$$

Maximum $Z = 1000x_1 + 8000x_2 + 400x_3$

Now Find x_1 intercept

Put $x_2 = 0$ and $x_3 = 0$

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

Put $x_2 = 0$ and $x_3 = 0$

$$12x_1 + 6(0) + 8(0) = 3000$$
$$12x_1 + 0 + 0 = 3000$$
$$\frac{12x_1}{12} = \frac{3000}{12}$$
$$x_1 = 250$$

$P_1(250, 0, 0)$

Now for x_2 intercept put $x_1 = 0$ and $x_3 = 0$

$$12x_1 + 6x_2 + 8x_3 = 3000$$
$$12(0) + 6x_2 + 8(0) = 3000$$
$$0 + 6x_2 + 0 = 3000$$

$6x_2 = 3000$

dividing by 6

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

$x_2 = 500$

$P_2(0, 500, 0)$

Now for x_3 intercept

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

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

$12(0) + 6(0) + 8x_3 = 3000$

$0 + 0 + 8x_3 = 3000$

$8x_3 = 3000$

dividing by 8.

$$\frac{8x_3}{8} = \frac{3000}{8} = 32$$

$x_3 = 375$

$P_3(0, 0, 375)$

That is all points put in equation (Z) to find the maximum point value.

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

$Z = 1000(250) + 800(0) + 400(0)$

$Z = 2,50,000 + 0 + 0$

$Z = 2,50,000$

Now put another intercept

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

$Z = 1000(0) + 800(500) + 400(0)$

$Z = 0 + 40,0000 + 0$

$Z = 40,0000$

Now put 3rd intercept (3)

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

$Z = 1000(0) + 800(0) + 400(375)$

$Z = 0 + 0 + 150000$

$Z = 1,50,000$

$Z = 1000(500) + 0 + 0 = 50,00,00$

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

$Z = 0 + 0 + 400(350) = 100800$

Now Mari points is

$P_4(500, 0, 0) = 500000$

Q2 (4)

(A)

Type of product	No Sold in a month	Net Profit
A	150	
B	200	

Solution

Suppose

x_1 and x_2 be the number of prduction at A and B, Since allowed d_i = under utalization at product capacity variable.

Since goals is the maximization at Sales hence positive deviation will not apper in constraints related with Sales

So

$$X_1 + d_2 = 150$$

and

$$X_2 + d_3 = 200$$

→ d_2 = under achievemant at Sales goals product A

→ d_3 underachievement at Sales goals for product B

Now the goal programming mathematical modes can be

Minimize

$$Z = P_1d_1 + P_2d_3 + P_3d_1$$

Subjected to constraints

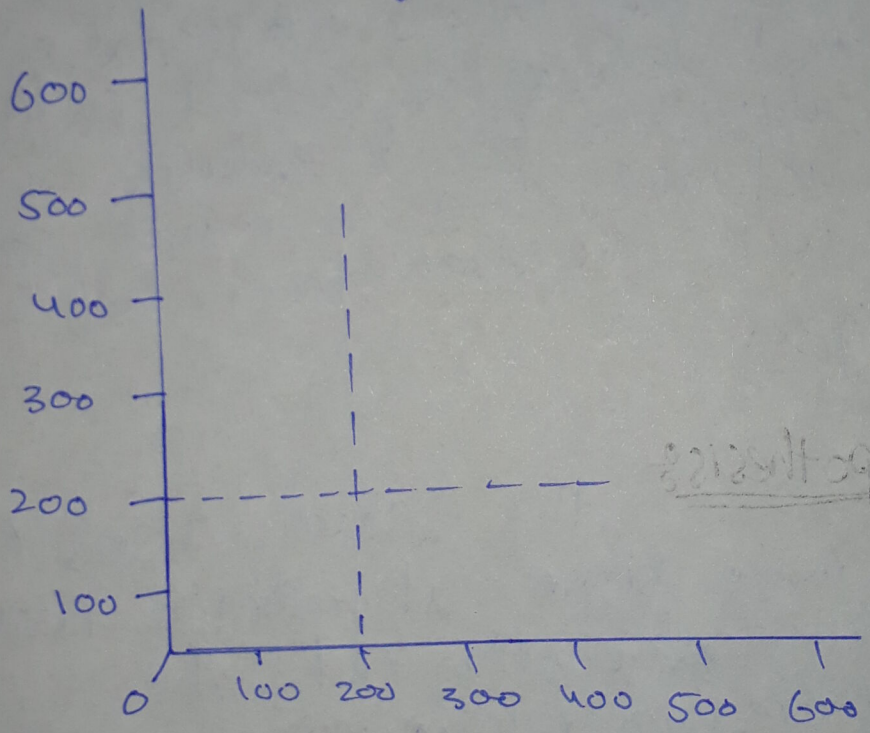
$$X_1 + X_2 + d_1 - d_1 = 500 \quad (5)$$

$$X_1 + d_2 = 150$$

$$X_2 + d_3 = 200$$

and $X_1, X_2, d_1, d_2, d_3, d_1 \geq 0$

All the goal constant can be plotted on the graph.



(Answer)

product A as 20% product B, Because the Net profit from the sale at product A is twice the amount from that at Product B.

(Q3) write a detail Summary of the research paper? (6)

Answer:-

Indroduction:- critical path methology is a programming methology that will replicate all of the varicus interactions. Communication and defects the critical Path method is an algorithms for scheduling a set of projects activates, its a commonly used in conjunction with the evaluation and Review techniges.:-

⇒ Research hypothesis:- this study uses one Rule among many simple algorithmic rules to calculate the calculation at the longest path, therefore minimum amount at time is required to program an activity from the dragonfly algorithms and that the result can be examined.

Literature Review:-

Exploting cpm to calculate the frame requires, and value required for projects and events - cpm is used to appear the value and time

Interchanges by activities that take a shorter time at in expensive.

=> CPM Simulation:-

cpm analysis the earlist begin time is the earlist and time Eff the latest end time ration frequancy and total float Tf, should be document for each activity.

=> Research methodology:-

the study. Utilize the dynamic and statiz group behavoir at dragonthis in nature to obtain and dragonfly algorithem the benifits at the approach are to use dragonfly behavior to achieve

Result:-

Separation from each other Si to avoid the dragonthis from statis collesions with follow human cordination and digement Ai,

is the draganify behaviar to match speed with other fellow human.

Discusions

Most of the ventures are tayetceiental and throryed endevois whose objective is to create, recreate or change different affices these kind at retures include dynamic process which will be isolated into four stages concepatalization definition realization and utilize.

Conclusions-

the dragnify Rule is successful intended to optimize the conclusion we have used this techniques to solve those problems taking into account projects cost activity duration and activity in the required in diagram..