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SUBJECT: OPERATION REASEARCH.
Section : B (WEDNESDAY)
SEMESTER : 4TH
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Question no 2:

A manufacture produces two types of products A and B. the plant has production capacity of 500 hours a month...?

Type of p	Number Solid in m	Net Profit.
A	150	
B	200	

The MD of the company has set the following goals which are arranged in order of proivety.

P_1 → No under utilization of plant production?
P_2 → maximum possible number.....?
P_3 → minimize overtime operation of the plant?

Solution:

Suppose:

X_1 and X_2 be the number of products of A and B. Since overtime are not allowed.

$X_1 + X_2 + d_1 - d_1 = 500$ (plant capacity cost).

d_1 = under utalization of product capacity variable.

Since goals is the maximation of sales. hence positive deviation will not appear in constraints, dated with sales.

So,

$$X_1 + d_2 = 150$$

and $X_2 + d_3 = 200$

$\rightarrow d_2$ = Under achievement of sales goals Product A.

$\rightarrow d_3 \rightarrow d_3$ Under achievement of sales goals for product B.

Now, the goal programming methimatical model can be.

minimize

$$Z_1 = P_1 d_1 + P_2 d_3 + P_3 + d_1.$$

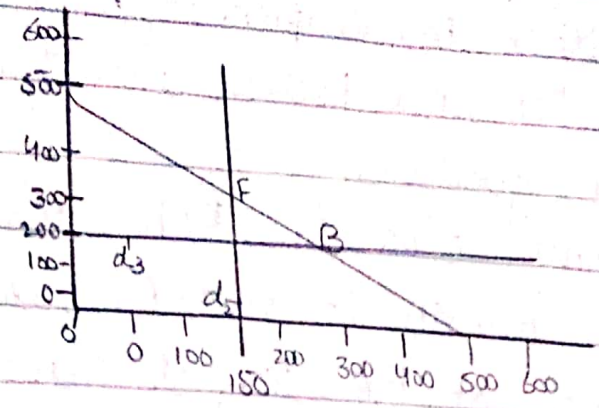
Subjected to contraints.

$$X_1 + X_2 + d_1 - d_1 = 500$$

$$X_1 + d_2 = 150$$

$$X_2 + d_3 = 200$$

and $X_1, X_2, d_1, d_2, d_3, d_4 \geq 0$.
All the goal constrants can be plotted on the graph.



Answer:

Product A as for product B. Because the net profit from the sale of product A is twice the amount from that of product B.

Question no 3:
write a detail summary of the Research paper provided to you in Sic. the summary must include each section...?

Answer:

Introduction:.

Critical path Methology is a Programming methology that will Replicates all of the various intervection

Communications. and defects. the critical path method is an algorithms For Schedule a set of project activaties. its a commonly used in conjunction with the program evolution and Review techniques.

→ Research hypothesis.

This study uses one Rule among many simple algovithmic rules to simulate the calculation of the largest path: therefore. minimum amount of time is Required to perform an activity from the dragonify algerithms and that the Result can be examixed

Literature Review:-

Exploting cpm to calculate the time. Resources, and value vequived 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 if the earlist and time Eff; the latest end time vatio frequency, and total float TF, Should be documented

for each activity.

Research methology:-

The study utilize the dynamic and static group behavoir of dragnthis in nature to obtain and dragnify algorithm the benifits of this approach are to use dragnthis behaviour to achieve.

Result:-

Separation from each other Si, to avoid the dragnthis from static collesions with other fellow humans coordinations and aligement Ai, is the dragnityes behaviour to match Speed with other fellow humans.

Disscussion:-

Most of the ventures are target oriented and Arranged endeves. whose objected is to create, recreate or change different offices. these kinds of reventures include dynamic process which will be isolated into four stages. conceptalization, definations, realization and utalize.

Conclusion:-

The dragnify Rule is Successfully intended to optimize the conclusion. we

have used this techniques to solve these problems, taking into account projects cost activity duration and activity duration and activity correlations in the required path diagram.

Question no 1:

A company produces of products P_1, P_2 and Time required.

Production	Progress	finishins
P_1	12	03
P_2	06	08
P_3	08	06
Company Capacity	3000	1500

Now, convert into linear Eq

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

$$3x_1 + 8x_2 + 6x_3 \leq 15$$

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

Now find x_1 intercep

Put $x_2 = 0$ and $x = 0$.

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

Put $x_1 = 0$ and $x_2 = 0$.

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

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

$= P_1(250, 0, 0)$

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

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

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

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

$P_2 = (0, 500, 0)$.

Now for x_3 intercept put

$x_1 = 0$, and $x_2 = 0$.

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

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

$x_3 = \frac{1500}{6} = 250$

$P_6 = (0, 0, 250)$

This all point put in $Eq(z)$ to find the maximum value.

$z = 1000x_1 + 800x_2 + 400x_3$.

$z = 1000(250) + 0 + 0 = 250000$.

$z = 100 + 800(500) + 0 = 400000$.

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

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

$z = 0 + 800(182.5) + 0 = 150000$

$z = 0 + 0 + 400(250) = 100800$.

Now, the miximum point is

$P_2(500, 0, 0) = 500000$.