

Name: Shah Zeb

ID#: 14798

Assignment: Operation Research

Class Timing: WED \Rightarrow 8:00 :: 11:00

(Q1)

A Company produces 3 types of products P1, P2, P3.

Production	Time Required Progress	Finishing	Total Amount
P1	12	03	1000
P2	06	08	800
P3	08	06	400
Company Capacity	3000	1500	

Sol.

Now Convert into linear P₂

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

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

$$\text{Maximum } Z = 1000x_1 + 800x_2 + 400x_3$$

Now find x_1 intercept

$$\text{put } x_2 = 0 \text{ and } x_3 = 0$$

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

$$\text{put } x_1 = 0 \text{ \& } x_3 = 1$$

(2)

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

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

$$P_1 (250, 0, 0)$$

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

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

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

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

$$P_2 (0, 500, 0)$$

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

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

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

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

$$P_3 (0, 0, 250)$$

⇒ Now all the points put in eqⁿ
to find the maximum value

$$Z = 1000x_1 + 200x_2 + 400x_3$$

$$Z = 1000(250) + 0 + 0 = 250,000$$

$$Z = 1000 + 800(500) + 0 = 400,000$$

$$Z = 0 + 0 + 400(875) = 350,000$$

$$Z = 1000(500) + 0 + 0 = 500,000$$

$$Z = 0 + 800(187.5) + 0 = 150,000$$

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

Ans

(Q2)

(Ans)

Suppose x_1 and x_2 be the numbers of production of "A" & "B". Since allowed under utilization of product capacity variables. so the goal is the minimization of sales, hence positive deviation with appear in constants related with sales 80

$$x_1 + d_2 = 150$$

$$x_2 + d_3 = 200$$

" d_2 " = Under achievements of sales goals product "A".

d_3 = Under achievements of sales goals product "B".

Now the goal programming mathematical models can be minimized.

$$z = P_1 d_1 + P_2 d_3 + P_3 d_1$$

Subjected to Constraints

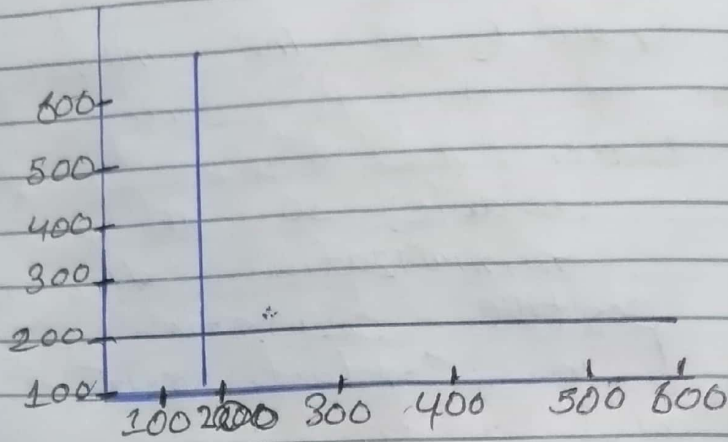
$$x_1 + x_2 + d_1 - d_1 = 500$$

$$x_1 + d_2 = 150$$

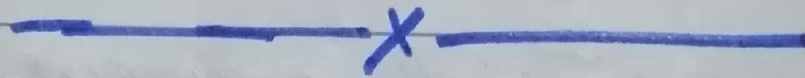
$$x_2 + d_3 = 200$$

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

All the goals constants can be plotted on the graph.



Product A as for product B
 Because the profits from
 the sale of product A are
 the amount from that of
 product B



(Q3)

Ans

Introduction, Critical path methodology is
 a programming methodology
 which also replace
 all of the various
 Introduction.

Communication and defects the critical path method is an algorithm for scheduling a set of projects activities its an commonly used in conjunction with the Program evaluation and Review techniques

Hypothesis of Research..

The study uses one rule among many simple algorithm rules to simulate the calculation of the largest paths, so minimization amount of time required to performed an activity form and that the result can be examined

Literature Review..

Expecting CPM to calculate the same requires and values required for projects and events CPM is used to appear values and time interchanges by activities that take a shortest time.

Simulation of

Simulation of CPM

The earliest began time analysis
 the consist and time of
 The west end time of
 frequency variation and total
 of last TF should be
 documented for each
 activity.

Research Methodology:

The study
 utilize the dynamic behavior
 static group in nature
 of algorithm to obtain algorithm
 to approach the benefits of this
 dropping behaviour to
 achieve

Results:

Separation from each
 other si to avoid the
 drop with static
 collision with other follow
 human coordination and
 segment Ai is the
 drop needs behaviour to
 match speed with other
 follow human

Discussion:

The most of the venture are typical and theoretical endures whose objective is to create or change different offices / definition realized

Conclusion:

The dragmify rate is successfully inverted to optimized the conclusion. We have also use the different techniques to solve the cost duration and also the activity deviation. In activity diagram will be required