(1)

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BS(SE) 4th Section 'A'

Major assignment

Question No 1.

Ans

Solution:-

Production	Progress	Finishing	T-amount
P_1	12	03	1000
P_2	06	08	800
P_3	08	06	400
	3000	15000	

Converting into linear programming.

$\Rightarrow 12x_1 + 6x_2 + 8x_3 \leq 3000 \Rightarrow$ (i)

$\Rightarrow 3x_1 + 8x_2 + 6x_3 \leq 1500 \Rightarrow$ (ii)

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

$\Rightarrow$ Put $x_2 = 0$ and $x_3 = 0$

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

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

$\Rightarrow x_1 = \frac{3000}{14} = 250$

$\Rightarrow P_1 (250, 0, 0)$

$\Rightarrow$ Now for x_2

Put $x_1 = 0$ & $x_3 = 0$

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

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

$\Rightarrow P_2 (0, 500, 0)$

Now for x_3:

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

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

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

$P_3 (0, 0, 250)$

Putting all in eq (2)

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

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

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

$Z = 0 + 0 + 400\ (375) = 15000$

$Z = 1000\ (500) + 0 + 0 = 50000$

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

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

the maximum point

$P_4\ (500, 0, 0) = 50000$

$Z = 500000$

Question: NO. 8.

Answer:

* The MD of the company has the following goals which are arranged in order of priority.

* P_1 = No under utalization of plant production capacity.

* P_2 sells maximum possible number of products A and B. The MD has twice as much device to sell product "A" as for product "B" because the net profit is twice the amount from that of product 'B'

* P_3 maximize overtime operation of the plant.

* We are formulating the above as goal programming problems and solving it.

* Let x_1 and x_2 be the number of product A and B.

Since:

$$x_1 + x_2 + 2\bar{i} - 2i = 500$$

Where

$2i$ = under utalization of product capacity variable.

Z_i^+ = overtime production operation capacity available.

* goal is the maximization of sales.

Then $x_1 + Z_2^- = 150$

and

$x_2 + Z_3^- = 200$

Where

Z_1^- = under achievement of sales goals of product A"

Z_3^- = Under achievment of the sells goals of product 'B'

Maximize:-

$V = P_1 d_1^+ + 2P_2 d_2^- + P_2 d_3^- + P_3 d_1^-$

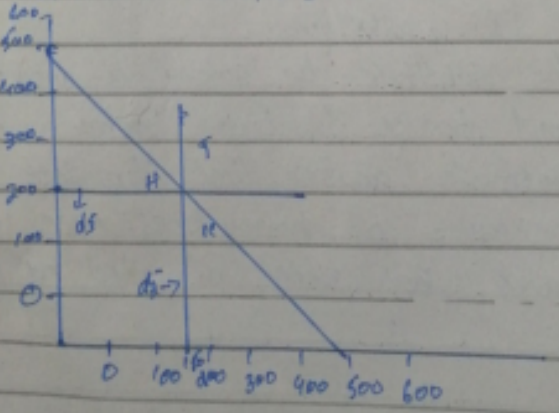
Subjected to Constaints

$x_1 + x_2 + d_1 = 500$

$x_1 + d_2 = 150$

$x_2 + d_3 = 200$

and $x_1, x_2, d_1^-, d_2, d_3, d_i \geq 0$



Question No 3:

Research paper

Summary:-

Introduction:-

* The CPM (critical path method) techniques is used to search out the longest path to do required activities.
* this had been done to reduce the restriction and enhance the computifying potency of classic CPM analysis.

* it will replicate all of various interaction and enhance comunications. and defects of a path within the kind of project network diagram.

* this technique is used to hunt down the longest path to perform activities which ends up. the creation of an intensive network of posindency activities inside the surrounding.

* In CPM network calculation. it is ossumed that each interaction occurs at a specific time.

* By plotting the cute supporting the time - ost line. the gradient obtained throughout this core may be used to do specific calculations.

Literature Review:

- CPM can be useful an many aspects of life. In the past many authors have been succeded in exploiting CPM to calculate the time resources and value required for projects and events.

Dragon fly Algorithm:-

these creature perform task expeditiously in groups and this can be the most purpose of the study said (SI) swarm intelligence. Researchers through out this field attempt to resolve the native rules for interaction.

The particle Swarm. Improvement formula is, in addition another well-regarded SI paradigm.
the Subtitute be colony is another recent and trendy SI based formula. this formula another time stimulate the social behavior of honey bees. once hunt nectos and has been projected by karabaga.

CPM Stimulation:

* the classic CPM analysis is easy and effective for straight forward and small scale CPM network while facing complicated large scale CPM network CPM formula becomes inefficient.

Research Methodology:

the benefit of these kind of approaches are to used the dragon flies to achives goals such as environmental identifications and many more.

the pattern of dragon flies are below:

* Splitting, settings, Cohesence, search food, Deviation from enemy.

$E_i = \bar{x} + x$

x = positive of the current individual.

$\bar{x}$ = Show the position of the enemy

the method of calculating the dragon fly algorithm.

S = shows the Separation rate.

Si = Shows the Separation of J

Ci = is the Cohesence of person J^{th}

'A' is the J^{th} setting

'Ei'' is the position ~~cohesente~~ of enemy is the J^{th}.

$$X_{t+1} = X_t + \bar{\Delta} X_t + 1$$

$$C_i = \xi_i = \frac{|x_j|}{N} - v$$

$$A_i \xi_i = \frac{\Sigma v_j}{N}$$

$$X_{t+1} = \begin{cases} -w + r \subset T(\Delta x + 1) \\ x_r \geq T(\Delta x_t + 1) \end{cases}$$

Result 2:-

we consider a suitable weight for each dragon fly to adjust their behaviour and to find the appropriate solution.

We have consider 20 nodes in the network. for Example. Cost of Connecting A to C_6 is 4.5 we can use the longest route with the lowest cost.

The process of implementing the proposed algorithum is

Step # 1:- Data entry

Step # 2:- Determine and define the status.

Step # 3:- Determine the attributes of Communication in nodes.

Step # 4:- find the best route

Discussion :-

The method support the Principals of Socio-Psychology-Swarm Intellagence, they observe and understand their environment and can act to maximize the chances of sucess.

The paper provide a new methodology for improving time cost which can be a new Swarm Intellagence techniques.

Actually this study uses all the Sensory activity behaviour and Intellagence of the dragonfly.

CPM Simulation model is valid through the comparison with the classic CPM and is well tried to be much more economical.