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Main characteristics of L.P.P.s

Q1 (1) Decision Variables The decision variable referred to limited resources & are denoted by x, y etc.

(2) Objective functions The linear function of a decision variable which is to be minimized or maximised is known as objective function of linear P.P.

(3) Constraints The restrictions or limits which are determined to make it optimum (max. or min) are called constraints.



④

Linearity \rightarrow Proportionality & non-negativity
Condition \rightarrow

The objective function & all the constraints must be linear & the values of all decision variables should be non-negative if any of the decision variable is unrestricted in sign a trick can be applied employed which will enforce the non-negativity condition without changing the original information of the problem.

⑤

Additivity

⑥

Divisibility

⑦

Deterministic or Certainty

⑧

Finiteness



Assignment Problem

(i) It means to allocate various jobs to various people in the organization. It should be done in such a way that the overall processing time is less, overall efficiency is high, overall productivity is high etc.

(ii) We solve an assignment problem by using two methods

(a) Complete enumeration method

Transportation Problem

(i) A transportation problem is concerned with transportation method or selecting routes in a product distribution network among the manufacturing plant and distribution warehouse situation in different regions or local outlets.

(ii) We use 3 methods to solve a transportation problem

(a) VAM



(b) Hungarian method

(b) NWCR (c) LEM

(iii) In an assignment problem only one allocation can be made in a particular row or column.

(iii) It is not subject to any restriction such as restriction are neither to assignment problems only. Many allocation can be made in a particular row or column.

(iv) In assignment problem manager aims at assignment job to various people.

In this method manager searches for a distribution which can lead to minimization of cost & max. of profit.

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(2) When the no. of jobs & no. of workers are not equal. It is a unbalanced problem.

(3) When the total demand is not equal to the total supply is a unbalanced problem.