TRANSPORTATION PROBLEM

Aim of Transportation Model
What is a Transportation Problem?

- To find out optimum transportation schedule keeping in mind cost of transportatinto be minimised.

- The TP is speacial type of LPPwhere the objective is to minimise the cost of distributing a product from a bnumber of sources to a number of destinations.
- Because of its special structure the usual simplex method is not suitable for solving TP. These problem required special method of solution.

The Transportation Problem

- The problem of finding minimum - cost distribution of a given commodity from a group of supply centers (sources) i=1,….,m to a group of receiving centers (destinations) j=1,…..,n
- Each source has a certain supply s_i .
- Each destination has a certain demand.
- The cost of shipping from a source to a destinations is directly proportional to the number of units shipped.

Application of TP

- Minimise shipping cost
- Determine low cost location
- Find minimum cost production schedule
- Military distribution system

Two types of TP

- **Balanced TP**

  where the total supply equals total demand

  Total supply = Total demand

- **Unbalanced TP**

  where the total supply is not equal to the total demand

  Total supply ≠ Total demand

Phases of solution of TP

- Phase I : Obtains the initial basic feasible solution by using any of the following five methods :

  1. North West Corner Rule (NWCR)
  2. Row Minima Method
  3. Column Minima Method
  4. Least Cost Method
  5. Vogle's Approximation Method (VAM)

- Phase II : Obtains the optimum basic solution by using

  Modified Disrtibution Method (MODI)