Operation Research Notes

# History of OR

During ww2 there was a decision taken by a scholar of al the fields chosen to make a decision on the events and analyse it by all the angles and to make a decision on it, from that decision operation research was derived

# Definition of OR

* It is a decision making theory.
* Operation Research is a quantitative approach to decision making based on the scientific method of problem solving

# Scope of OR

* Operation research helps a manager to take better and quicker decisions.
* Operation Research helps to co-ordinate all the decisions of an organisation
* Operation Research helps a manager to control his sub-ordinates.
* Operation Research helps to improve the productivity of the organisation.

Linear programming problem

# Objective Function

The linear function which is to be optimised is called Objective Function of LPP. It is denoted by

“Max Z/Min Z=C1x1+C2x2+…”

# Decision variables

The unknown variables (number of items/units) in terms of which objective function is expressed are called decision variables.

# Constraints

The linear conditions in terms of equalities or inequalities imposed upon the variables to be determined are called Constraints or restrictions of LPP.

# No Negativity Constraints

The decision variables can never negative and it is denoted by x1>=0, x2>=0,…

# Applications of LPP

In industries all mega companies have several departments within the company itself like: Production department: to minimise the cost of production; Marketing Department: to maximise the amount of selling products and to minimise the cost of selling; Finance Department: to minimise the capital required to maintain any level of business.