

[Glossary] [Linear Programming Problem]

Subject:	Business Economics
Course:	B.A., 4 th Semester, Undergraduate
Paper No. & Title:	Paper – 403(Four Zero Three) Quantitative Techniques for Management
Unit No. & Title:	Unit - 1 Introduction to Operation Research, Linear Programming
Lecture No. & Title:	2(Two): Linear Programming Problem

Glossary:

- 1) **Linear programming:** A mathematical technique used to help management decided how to make the most effective use of an organization's resources.
- 2) **Objective function:** A mathematical expression of the goal of an organization, stated as to maximize or to minimize profit or loss.
- 3) **Constraint:** A restriction on the resources available to a firm, stated in the form of an inequality or an equation.
- 4) Feasible solution: A point in the area satisfying all of the problem's constraints.
- 5) **Slack variable:** A variable added to \leq type constraints in order to create an equality for a simplex method. If represents a quantity of unused resources.
- 6) **Surplus variable:** A variable inserted in $a \ge type$ constraints to create an equality, if represent the amount of resources usage above the minimum required usage.
- 7) **Artificial variable:** A variable that has no meaning in a physical sense but acts as a fool to help generate an initial solution of lpp.
- 8) **Basic variables**: The set of variable that are in the solution , have positive non zero values, and are listed in the solution mix column of simplex table.
- 9) **Basic feasible solution :** A solution to an lpp that correspond to a carrier point of the feasible region.
- 10) **Degeneracy:** A condition that arises when there is a tie in the values used to determine which variable will enter the solution next. It can lead to cycling back and for the between non-optimal solutions.