Unit-I

Syllabus :

1.1 Various definitions, statements of basic theorems and properties, Advantages and Limitations,

1.2 Application areas of Linear programming

1.3 Linear Programming– Concept

1.4 Simplex Method and Problems

1.5 Two Phase Simplex Method and problems

Note : Case study-based problems

Extra Readings : Formulation of Linear programming, Solution of LPP using Graphical method.

Unit-II

Syllabus :

2.1 Markov chains : Applications related to technical functional areas,

2.2 Steady state Probabilities and its implications,

2.3 Decision making based on the inferences Monte Carlo Simulation.

Extra Readings : Application of Markov chain in Queuing theory, Simulation techniques used in Machine learning and bioinformatics.

Unit-III

Syllabus :

3.1 Processing n jobs through 2 machine

3.2 Processing n jobs through 3 machine

3.3 Processing n jobs through m machine

Extra Readings : Processing of n jobs through m Machines

Unit-IV

Syllabus :

4.1 Basic differences between PERT and CPM.

4.2 Network diagram.

4.3 Time estimates (Forward Pass Computation, Backward Pass Computation.

4.4 Critical Path.

4.5 Probability of meeting scheduled date of completion,

4.6 Calculation on CPM network.

4.7 Various floats for activities

4.8 Event Slack.

4.9 Calculation on PERT network.

4.10 Application of schedule based on cost analysis and crashing.

4.11 Case study-based problems.

Extra Readings : Optimal Cost estimation by crashing the network, Explore the MS Project tool.

Unit-V

Syllabus :

5.1 Introduction

5.2 n X m zero sum game with dominance

5.3 Solution using Algebraic, Arithmetic and Matrix strategy

Extra Readings : Learn the difference between Sequential and Simultaneous game

Unit-VI

Syllabus

6.1 Introduction to Decision Analysis

6.2 Types of Decision-making environment

6.3 Decision making under uncertainty and under risk

6.4 Concept of Decision Tree

Extra Readings : Decision models in Econometrics and computer science

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