B.C.A. Part II Semester IV

Paper IV

OPERATIONS RESEARCH - II

UNIT - I :

Game Theory – Terminologies of Game Theory, Two Person Zero-Sum Games, The Maximin-Minimax Principle, Games without Saddle points-Mixed Strategies, Graphical Solution of 2x n and m x 2 games, Dominance Property. Introduction, Decision under Certainty, Decision under Risk, Decision under Uncertainty,
Decision Tree.

UNIT - II :

Network Scheduling by CPM/PERT – Introduction, Basic Concept,
Constraints in Network, Critical Path Method (CPM), PERT Network, PERT calculations, Time-Cost trade-off aspects in Network Technique, Advantage of Network (PERT/CPM).

UNIT - III :

Inventory Control
Introduction, Inventory Control, Selective Control Techniques, Types of Inventory, Economic Lot Size Problem, Problem of EOQ with shortage, Inventory Control Techniques – Uncertainty Demand, Stochastic Problem, Inventory Control with Price Breaks.

UNIT - IV :

Queuing Theory
Introduction, Terminologies in Queuing System, Characteristics of Queuing System, Poisson Process and Exponential Distribution, Classification of Queues, Definition of Transient and Steady states, Poisson Queues, Non-Poisson Queuing Systems, Cost-Profit Models in Queuing, Queuing Control.

Reference Books:

1. Operation Research by Kanti Swarup, P. K. Gupta, Man Mohan [Sultan]
2. Operation Research by R. Panneerselvam [PHI}
3. Introduction to Operation Research by Billy E. Gillet [TMH]
4. Operation Research by Hira Gupta
5. Operation Research Problems and Solutions by Sharma J. K. [MacMillan]
6. Operation Research Theory and Application by Sharma J. K., [MacMillan]