Subject Code : NSRCAY2

FIRST ALLIED PAPER – II : OPERATIONS RESEARCH

UNIT – I

Basics of operation research (OR) : Characteristics of OR – Necessity or OR in industry – OR and decision making – role of computers in OR.Linear Programming : Formulations and graphical solution of (2 variables) canonical and standard terms of linear programming problem.

UNIT – II

Algebraic solution: simplex methods – charnes method of penalties – two phase simplex method.

UNIT – III

Transportation Model: Definition – formulation and solution of transportation models – The row – minima, column-minima, matrix-minima and vogel's approximation methods. Assignment model: Definition of assignment model – comparision with transportation model – formulation and solution of assignment model.

UNIT – IV

Sequencing problem : Processing of n jobs through 2 machines – processing n jobs through 3 machines – processing 2 jobs through m machines.

GAME THEORY : Characteristics of games – maxima, minimax criteria of optimality – dominance property – algebraic and graphical method of solution of solving 2 x 2 games.

UNIT – V

Networks – Fulkerson's rule – measure of activity – PERT computation – CPM computation – resource scheduling.

NOTE : Equal weigtage may be given for all units in the syllabus.

REFERENCE BOOKS:

1. Hamdy A.Taha : Operation Research – An introduction 5th edition, PHI., New Delhi – 1996.
2. Ackoff, R.L. and Sasieni, M.W: Fundamentals of operation research, John wiley and sons, new york 1968.
3. Charnes A.Cooper W. and Hendersen A : introduction to linear programming, john wiley and sons, new york 1953.
4. Srinath l.s.: PERT and CPM Principles and applications, affiliated east press pvt. Ltd., new york 1973.
5. Kanti swarup, p.k. gupta & manmohan – operation research 1996.
6. S.Kalavathy: Operations Research – Second Edition – Vikas Publishing House Pvt. Ltd., 2