

## **B.COM 3<sup>RD</sup> SEMESTER**

### **COM-GE-3046(B): Operations Research in Business**

**Marks: 100**

**Credit: 6**

**Lectures: 65**

#### **Unit I: Introduction to Operation Research: 10 Lectures**

Evolution of Operation Research , Nature and characteristics of O.R , phases of O.R, methodology of O.R, Operation research model, role of computer in Operation Research,

#### **Unit II: Linear Programming : 15 Lectures**

Concept of Linear Programming, Uses and limitations of Linear Programming, Formulation of L.P problems, Concept of slack variable, Procedure of Graphical Method, Simplex Method (solutions of L.P.P. upto 3 iterations) Maximization Problems. (Simple problems related to commerce and business)

#### **Unit III: Inventory Control: 10 Lectures**

concepts and benefits of inventory control, Different types of costs in inventory system , Formulation and solution of Economic order quantity (EOQ) model, selective inventory control techniques (ABC Analysis and VED Analysis)

#### **Unit IV: Study of Replacement: 15 Lectures**

Replacement Problem, Replacement of items whose maintenance cost increases with time and the value of money remains same during the period, Replacement of items whose maintenance cost increases with time and the value of money also changes with time, selection of best item (machine) amongst two

#### **Unit V : Project Management: 15 Lectures**

Basic differences between PERT and CPM, phases of project management, PERT / CPM network, rules for network construction , critical path analysis, Float of an Activity and Event , Critical Path, project scheduling with uncertain activity times (only simple numerical examples are needed)

**Recommended books :**

Operations Research 9th Edition, Kantiswarup, Gupta P.K. & Sultan Chand & Sons Manmohan  
Operations Research – An introduction 6th Edition , Taha H.A., Hall of India

Operations Research Techniques for Management 7th Edition, Kapoor V.K., Sultan Chand & Sons

Operations Research 9th Edition, Kanti Swarup, Gupta P.K. & Sultan Chand & Sons

Operations Research : Theory and Applications 4<sup>th</sup> Edition , J.K Sharma