

MAJOR BASED ELECTIVE - I - OPERATIONS RESEARCH

**(In all the Units No Book Work need to be proved –
Only applications of the Book works need to be taught)**

UNIT I

Introduction to Operations Research - Elementary treatment of Linear Programming – Simplex Method for $<$, $=$, $>$ constraints.

UNIT II

Application to Transportation problem –Transportation algorithm –Degeneracy algorithm –Degeneracy in Transportation Problem , Unbalanced transportation problem- Assignment algorithm – Unbalanced Assignment problem .

UNIT III

Sequencing & Replacement.

UNIT IV

PERT CPM network – Critical & sub Critical jobs –Determining the Critical Path – Network Calculation of PERT networks – Probability of PERT.

UNIT V

Inventory Theory –Variables in an inventory problem –Techniques of Inventory Control with known demand.

- [1] Purchasing Model with No shortage
- [2] Purchasing Model with shortage
- [3] Manufacturing Model with No shortage
- [4] Manufacturing Model with Shortage

TEXT BOOK(S)

- [1] Kanti Swaroop, Gupta. P.K, & Manmohan, Operations Research, Sultan Chand & Co.

UNIT – I -Chapter 0 Sections 0.1 to 0.9 ,Chapter 2 section 2.1 to 2.5 ,Chapter 3 Sections 3.1 to 3.4 , 3.8

UNIT – II -Chapter 9 Sections 9.1 to 9.9 & Chapter 10 Sections 10.1 to 10.3

UNIT – III -Chapter 16 Section 16.1 to 16.5 & Chapter 18 Section 18.1 to 18.3

UNIT – IV -Chapter 20 Sections 20.1 to 20.8

UNIT – V -Chapter 17 Sections 17.1, 17.2, 17.4 to 17.6, 17.8, 17.9

REFERENCE(S)

- [1] Hamdy A. Taha, Operations Research (7th Edn.), Prentice Hall of India, 2002.
- [2] Richard Bronson, Theory and Problems of Operations Research, Tata McGraw Hill Publishing Company Ltd, New Delhi, 1982.