

**PAPER M307OE: OPERATION RESEARCH**  
**(2 Hrs./week)**

Operation research: Development, Advantages, Disadvantages of operation research. Definition of Linear Programming Problem (L.P.P.) - Formulation and graphical solutions of L.P.P. - Simplex method - Dual simplex method. **8 Hrs.**

Introduction to Transportation Problem - Initial Basic Feasible solution - Moving towards Optimality - Degeneracy in Transportation Problems - Unbalanced Transportation Problem - Assignment Problem **10 Hrs.**

Games and Strategies - Introduction - Two person zero sum games – Maxi-Min and Mini-Max Principles - Games without saddle point - Solution of 2 x 2 rectangular games, conversion of game problem into LPP . **8 Hrs.**

**TEXTBOOKS:**

1. Hamdy A Taha, "Operations Research", Prentice Hall of India, 1995.
2. A. Mukherjee, N.K. Bej, "Advanced Linear Programming and Game Theory", Books and Allied (P) Ltd, 2013.

**REFERENCE BOOKS:**

1. Kanti Swarup, P K Gupta, "Operations Research", Man Mohan, Sultan Chand & Sons, 1995.
2. G Hadley, "Linear Programming", Narosa Publishing House, 2002.
3. K. V. Mittal and C. Mohan, "Optimization Methods in Operation Research and System Analysis", New Age Publishers, 1996.

**Pattern of Question Paper:** Five full questions out of eight are to be answered.