**MA6701 Linear Programming and Game Theory**

**Linear Programming:** Theory of the simplex method, solution of a linear programming problem via simplex method, Charne's big-M technique. Two phase method, principle of duality in linear programming problem, fundamental theorem of duality, simple problems, the transportation and assignment problems.

**Game Theory:** Two – person zero sum games. Players and their strategies. Rectangular games. Pure and mixed strategies. Maximin and Minimax criteria. Optimal strategy and the value of the game. Solution of a game for mixed strategies. Geometric method for resolving 2 x n and m x 2 games. Fundamental theorem. Relationship between game theory and LPP.

**References:**

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2. F.S. Hillier and G.J. Lieberman, Introduction to Operations Research, 9th Ed., Tata McGraw Hill, Singapore, 2009.
3. Hamdy A. Taha, Operations Research, An Introduction, 8th Ed., Prentice-Hall India, 2006.
4. G. Hadley, Linear Programming, Narosa Publishing House, New Delhi, 2002.
5. Dutta, Prajit K. (1999), Strategies and games: theory and practice, MIT Press, ISBN 978-0-262-04169-0. Suitable for undergraduate and business students.
6. Fernandez, L F.; Bierman, H S. (1998), Game theory with economic applications, Addison-Wesley, ISBN 978-0-201-84758-1. Suitable for upper-level undergraduates.
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