SARDAR PATEL UNIVERSITY
Programme & Subject: Master of E-Business (M.Eb)
Semester: II
Syllabus with Effect from: June-2010

Paper Code: PM02CMEB01	Total Credit: 4
Title Of Paper: Quantitative Techniques for Business Decisions	

Unit	Description in Detail	Weightage (%)
I	**Linear Programming Problem** (20 %) Nature and scope of operations research, Linear programming formulations of linear programming problems, Assumption of LPP **Methods of solving LPP:** Graphical Method Special cases: a) Infeasibility b) Unbounded ness c) Degeneracy d) Multiple optimal solution Simplex Method Duality, Economics interpretation of dual sensitive analysis. **Decision Theory** (5 %) Pay-off table, Opportunity loss or regret table, Decision rules (Under certainty and Risk), Decision tree.	25%
II	**Transportation & Assignment Problems** (15 %) **Transportation Problems:** North-West corner Method Vogel's Approximation Method **Testing of optimality:** Stepping stone Method MODI Method **Special cases:** Unbalanced Transportation problem Degeneracy **Assignment Problems:** Complete Enumeration problems Hungarian method(Maximization & Minimization Problems) **Measure Of Central Tendency & Dispersion** (10 %) Basic Terminologies, Construction of frequency distribution. Measures of central tendency (i) Mean (ii) Weighted mean (iii) Mode (iv) Median Measures of dispersions (i) Range (ii) Standard Deviation (iii) Coefficient of Variation	25%
III	**Probability** (10 %) Basic terminology in probability, Different definitions of probability, Probability rules (Without proof) Probabilities under conditions of statistical independence Probabilities under conditions of statistical dependence	25%

	Probability Distribution	(15 %)	
	Random variables, Expected value		
	Binomial distribution		
	Poisson distribution		
	Normal distribution		
IV	**Correlation & Simple Regression**	(10 %)	
	Correlation:		
	Introduction, Correlation analysis, scattered diagram, Karl Pearson's correlation coefficient		
	Simple Regression:		
	Introduction, Method of least squares & its examples		25%
	Network Analysis	(10 %)	
	PERT & CPM Networks, Rules of network construction, Earliest and latest times, Determination of critical path, Determination of float.		
	Simulation	(5 %)	
	Process of simulation, Monte Carlo simulation of an inventory system, Simulation of queuing system, Advantages & Disadvantages of simulation.		

Basic Text & Reference Books:-

- ➢ Statistics for Management by Richard I. Levin & David S. Rubin (Latest Edition)
- ➢ Quantitative Techniques in Management by N. D. Vohra (Latest Edition)