SEMESTER - II

Quantitative Techniques

Computer Code-2003

Module 2.3

Evaluation Pattern: Internal Evaluation   25 Marks

External Evaluation   75 Marks

Unit	Topic	Weight age %	No. of Periods
	Objective: To familiarize students with statistical quantitative techniques and tools for business applications.		
1	**TESTING OF HYPOTHESIS** Concepts of a statistical population and sample form a population, Primary data, Secondary data sample surveys, Concept of Hypothesis, Testing of Hypothesis, Null & Alternative Hypothesis, Types of Error, (Consumer & Producers Risk), Level of Significance. Large Sample Tests : Hypothesis testing for proportion & Means of single & two sample test Chi-Square test of goodness of fit (with special reference to Finance)	25	15
2	**LINEAR PROGRAMMING PROBLEM** Formulation of Linear Programming Problems (LPP), Graphic solution to LPP, Cases of unique & multiple	25	15

	optimal solutions, unbounded solutions & infeasibility & redundant constraints. Solution to LPP using simple method - maximization & minimization cases. Shadow prices of the resources & the ranges of their validity. Identification of unique & multiple optimal solutions, unbounded solution, infeasibility & degeneracy.		
3	**APPLICATION OF STATISTICS IN FINANCE I** Rate of Interest - Nominal, Effective - and their inter-relationships, Compounding & Discounting a sum using different types of Rates. Types of Annuities, like immediate, due, deferred, perpetual, and their future & present value using different types of rates of interest, PV, NPV and IRR Depreciation of assets. Valuation of simple loans & debentures. Sinking Funds (General annuities to be excluded).	**25**	**15**
4	**APPLICATION OF STATISTICS IN FINANCE II** Network Analysis : PERT, CPM (Without crashing) Modern Portfolio Theory: Markowitz Theory, Sharpe's Theory & random: Walk Theory. Risk Analysis: Measures of Risk & Performance: Range, Variance, Standard Deviation, and Expected value & Beta. Measures of Risks related to portfolio: Covariance & Correlation Return on security & Market Returns.	**25**	**15**
	Total	**100**	**60**

Suggested Reading :

1. Quantitative Methods B M Agrawal, Sultan Chand & Sons

2. S. P. Gupta, Statistical Methods, Sultan Chand & Sons, 2011

3. Mathematics & Statistics, Ajay Goel & Alka Goel, Taxman Allied Services (P) Ltd.

4. Fundamentals of Mathematics & Statistics, S P Gupta & V K Kapoor, S. CHand.2010

5. Statistical Methods, S P Gupta 2009

6. Business Statistics, Deshpande & Vaidya

7. Business Statistics, kumbhajkar