

VEER NARMAD SOUTH GUJARAT UNIVERSITY SURAT

TY B COM

STATISTICS (PRINCIPAL & SUBSIDIARY)

PAPER- III

(w.e.f. Academic Year 2004-05)

1. LINEAR PROGRAMMING TECHNIQUES: (30% Weightage)

Definition of general linear programming problems (lpp), formulation of lpp, examples of lpp occurring in various fields, graphical solution of lpp.

Transportation problem (TP): Balanced and unbalanced T.P, methods for initial basic feasible solution (IBFS), matrix minima method, Vogel's Approximation Method (VAM) and min (min-max) method, optimality test, MODI method for improving an IBFS, optimal solution.

Assignment problem (AP), Hungarian method for solving an assignment problem, variations in Assignment problem.

2. ELEMENTARY DECISION THEORY: (20% Weightage)

Meaning and scope of decision theory, basic elements of a statistical decision problem, decision analysis, payoff matrix, decisions under certainty; Decision under uncertainty: Laplace criteria, Maximin criteria, Hurwitz criteria, Minimax regret criteria; Decision making under risk: Expected Monetary Value (EMV), Expected Opportunity Loss (EOL), Expected Value of Perfect Information (EVPI); Baye's Principle.

3. TESTS BASED ON SMALL SAMPLES: (30% Weightage)

Tests based on χ^2 , t & F distributions : test of population variance, test of goodness of fit, test of independence of attributes, Yate's correction, test of single mean, test of difference between two means (for dependent and independent samples), test of significance of sample correlation coefficient, Fisher's z- transformation and its applications; test of two population variances, Analysis of variance (one way and two way classifications), confidence intervals for mean and variance for small samples.

4. NON-PARAMETRIC TESTS: (20% Weightage)

Introduction, comparison of parametric and non-parametric tests.

1. Sign test for single sample and paired samples.
2. Wilcoxon signed-rank test for one sample and paired samples.
3. Mann-Whitney test.
4. Median test.

BOOKS RECOMMENDED:

Sr.	Name of the Book	Author/s	Publication	Year
1	Applied Statistical Decision Theory	Raiffa H. & Schlaifer R	MIT Press	1968
2	Operations Research 6 th Ed.	H.A. Taha	Macmillan Publishing Co.	1999
3	Experimental Designs, Theory and applications	Federer W.T.	Oxford & IBH	1975
4	Design and Analysis of Experiments	Montgomery D.C.	John Wiley	1991
5	Linear Programming Methods and Applications	Gass S.I.	McGraw Hills	1975
6	Fundamentals of Statistics Vol.I	Goon A.M. Gupta M.K. & Das Gupta B.	World Press: Calcutta	1991
7	Non-Parametric Methods	Gibsons J.E.	McGraw Hills	
8	Non-Parametric Methods for Behavioural Sciences	Sidney Seigal	McGraw Hills	

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STATISTICS (PRINCIPAL)

PAPER-IV

(w.e.f. academic year 2004-05)

1. THEORY OF ESTIMATION:

(20% Weightage)

Problems of inferences, concepts of statistic, parameter, estimation, point estimation, properties of a good estimator (unbiasedness, consistency and efficiency); Methods of estimation: Method of moment, Method of Maximum Likelihood (for the parameters of Binomial, Poisson, Normal and Exponential distributions).

Interval estimation, concepts of confidence interval and confidence coefficient, confidence intervals for the parameters of Binomial, Poisson and Normal distributions for large samples only.

2. BUSINESS FORECASTING:

(20% Weightage)

Definition, objects, steps in business forecasting:

General assumptions in forecasting, uses & limitations & precautions. Analysis of past conditions and Analysis of present conditions.

Brief discussion of the following methods: (i) Business Barometers. (ii) Time-series Analysis (iii) Regression Analysis (iv) Extrapolation (v) Opinion Polls (vi) Input-Output Analysis (vii) Econometric models (viii) Causal models, their applications in business forecasting.

3. THEORY OF FINITE DIFFERENCES AND INTERPOLATION:

(20% Weightage)

Difference tables, methods of interpolation, dividend differences, Newton's and Lagrange's methods, Simpson's one third and three eight formulae.

4. PROJECT EVALUATION AND REVIEW TECHNIQUE (PERT) AND CRITICAL PATH

METHOD (CPM):

(20% Weightage)

Introduction, basic steps in PERT & CPM techniques, applications of PERT & CPM techniques, Network diagram representation, rules of drawing Network diagram, time estimates and critical path in Network analysis, disadvantages of Network techniques.

5. DETERMINISTIC INVENTORY MODEL:

(20% Weightage)

Introduction, types of inventory costs involved in inventory problems, concept of Economic Order Quantity (EOQ), EOQ models with uniform demand and with / without shortages.

BOOKS RECOMMENDED:

Sr.	Name of the Book	Author/s	Publication	Year
1	Fundamentals of Statistics	Elhance D.N.	Kitab Mahal; Allahabad	1986
2	Mathematics for actuarial students	H. Freeman		
3	An introduction to the Calculus of Finite Differences	Richardson C.H.		
4	Basic Statistics	Agarwal B.L.	Wiley Eastern Limited New Age International Ltd	
5	Operations Research	Sharma S.D.	Kedar Nath Ram Nath & Co., Meerut	
6	Mathematical Statistics	Kapur & Saxena	S Chand & Co. New Delhi	

Books recommended: (Stat for Business, FY BCom w.e.f. 2002-03)

Sr.	Name of the Book	Author/s	Publication	Year
1	Fundamentals of Statistics Vol. II	Goon A. M. Gupta M. K. Dasgupta B.	World Press, Calcutta	1999
2	Introduction to the theory of Statistics	Mood A. M. Graybill F. A. Bose D. C.	McGraw Hill	1974
3	Statistics: A Beginner's Text Vol. II	Bhat B. R. Srivenkatramana T & Rao Madhava H. S.	New age international Pvt. Ltd.	1997
4	Applied General Statistics	Croxton F. E. Cowden D. J. Kelin S.	Prentice Hall of India	1973
5	Fundamentals of Statistics	Elhance D. N.	Kitab Mahal, Allahabad	1986
6	Elements of Statistics	Asthana B. N.		
7	Statistical Methods, Theory and Applications.	Sancheti & Kapoor		

Books recommended: (Math for Stat, FY BCom w.e.f. 2002-03)

Sr.	Name of the Book	Author/s	Publication	Year
1	Determinants and Matrices	Aitken A. C.	McMillan	
2	Introduction to Matrices with application in Statistics	Graybill F. A.		
3	Fundamentals of Mathematical Statistics	Gupta & Kapoor	Sultanchand & Sons. New Delhi.	2003
4	Fundamentals of Statistics Vol. II	Goon A. M. Gupta M. K. Dasgupta B.	World Press, Calcutta	1999
5	Applied General Statistics	Croxton F. E. Cowden D. J. Kelin S.	Prentice Hall of India	1973

Books recommended: (Stat paper-I, SY BCom w.e.f. 2003-04)

Sr.	Name of the Book	Author/s	Publication	Year
1	Fundamental of Statistic Vol. II	Goon A.M. Gupta - M.K. & Das Gupta B.	World Press, Calcutta.	1986
2	A Textbook of Demography	Srivastava O. S.	Vikash Publishing House	1983
3	Statistical Quality Control	Grant E. L.	McGraw Hill	1964
4	Statistical Control & Industrial Statistics	Duncan A. J.	Taraporewala & Sons.	1974
5	Sampling Theory & Methods	Murthy M. N.	Statistical Publishing Society, Calcutta	1967
6	Sampling Survey Methods and its Applications	Sukhatme P. V. & Sukhatme B. V.	Indian Society of Agricultural Statistics	1984

Books recommended: (Stat paper-II, SY BCom w.e.f. 2003-04)

Sr.	Name of the Book	Author/s	Publication	Year
1	Mathematical Statistics	Kapur & Saxena	S Chand & Co. New Delhi	
2	Mathematical Statistics	Hogg & Crag		
3	Fundamental of Statistic Vol. I & II	Goon A.M. Gupta - M.K. & Das Gupta B.	World Press, Calcutta.	1999
4	Mathematical Analysis	Shanti Narayan	S Chand & Co. New Delhi	1993
5	Probability and Statistics	Degroot M.H.	Addison Wesley	1975
6	Introduction to Probability Theory	Hoel P.G., Port S.C. & Stone C.T.	Universal Book Stall	1991

Books recommended: (Stat paper-III, TY BCom w.e.f. 2004-05)

Sr.	Name of the Book	Author/s	Publication	Year
1	Applied Statistical Decision Theory	Raiffa H. & Schlaifer R	MIT Press	1968
2	Operations Research 6 th Ed.	H.A. Taha	Macmillan Publishing Co.	1999
3	Experimental Designs, Theory and applications	Federer W.T.	Oxford & IBH	1975
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8	Non-Parametric Methods for Behavioural Sciences	Sidney Seigal	McGraw Hills	

Books recommended: (Stat paper-IV, TY BCom w.e.f. 2004-05)

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1	Fundamentals of Statistics	Elhance D.N.	Kitab Mahal; Allahabad	1986
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5	Operations Research	Sharma S.D.	Kedar Nath Ram Nath & Co.; Meerut	
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