

VEER NARMAD SOUTH GUJARAT UNIVERSITY

M.Com-I.

Semester - II

Paper No:204

ADVANCED STATISTICS - 4

(Syllabus effective from Academic Year 2010-11 onwards)

(1) Testing of Hypothesis

(50%)

Statistical hypotheses, critical region, two types of errors, level of significance, power of a test, Neyman Pearson's lemma (without proof) and its applications (Binomial, Poisson, Normal and Exponential distributions). The most powerful test of a simple hypothesis against a simple alternative.

(2) Non- parametric Tests :-

(50%)

Introduction, Comparison of parametric and non-parametric tests, run test for randomness, komnogorov - Smirnov test of goodness of fit, extension of Median test, Kruskal - Wallis test cone way Analysis of variance), Rank correlation, Kendall's Rank correlation.

BOOKS :

1. Jaiswal, M.C. (1973) : Statistics Distributions; Guj.Uni. Book Pub. Board, Ahmedabad.
2. Rohatgi, V.K (1984) : Introduction to Probability Theory and Mathematical Statistics; Wiley Eastern.
3. Gibbons, J.D. (1976) : Non-Parametric Methods for Quantitative Analysis; Holt, Rinehart and Winston.
4. Sidney Seigal (1956) : Non-Parametric Methods for Behavioral Sciences; Mac-Graw Hills.

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ADVANCED STATISTICS - 5

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Demography (2):

(30%)

Life tables:- Assumptions, Constructions, uses and limitations Numerical examples to life tables. Fitting of logistic curve - Theory and examples.

Indian Official Statistics:

(40%)

Central Statistical Organization on (CSO) National Sample Survey (NSS), National Council of Applied Economics and Research, Department of Commercial Intelligence and Statistics (D.C.I.S), Indian Statistical Institution (I.S.I), Principal Publications containing data on the topics such as population, agriculture and industry.

National Income:

(30%)

Concept of National Income, Uses, methods of it's estimation, Lorenz curve and Pareto's law of Income distributions - Concepts, derivations and Applications.

BOOKS:

1. Pathak, K.B. and Ram, R.(1992) : Techniques of Demographic Analysis Himalaya Pub. House, Delhi.
2. Jaiswal, M.C. (1984) : Arth Vishayak ankadashashtra (in Gujarati); University Granth Nirmal Board, Ahmedabad.
3. Srivastava, O.S. (1983) : A Textbook of Demography; Vikas Publishing House.

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ADVANCED STATISTICS - 6

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(1) Econometrics Methods : (50 %)

The nature and role of econometrics. Introduction to econometrics models :

(i) Single equation model (ii) Simultaneous equation model.

Single equation model : Ordinary least squares model. Estimation of parameters, Problem of multicollinearity. Generalized least squares model - Estimation of parameters. (Aitken's Estimator), Problem of heteroscedasticity and auto-correction, method of estimation in each case, Grouping of observations and Durbin - Watson test.

Simultaneous equation model: Problem of identification, statements and application of Rank and Order conditions. Estimation of parameters of two equations by two-stage least squares method.

Dynamic Econometrics Model : Autoregressive and distributed lag models, Koyck's approach, Partial adjustment and adaptive expectation model.

(2) Time Series Analysis : (50 %)

Concept of Time series analysis: Concept of stationary time series. Difference between cyclical and oscillatory time series. 1st order Auto regressive model and determination dispersion matrix. Second order Auto regressive series. Auto-correlation function and correlogram. Periodogram analysis. Relation between the periodogram and the correlogram. Serial correlation and serial co-efficient of correlation.

BOOKS :

1. Box and Jenkins.: (1970) Time series analysis, Holden-Day publications.
2. M.C.Jaiswal (1964) : Artha vishayak Ankasashashtra (in Gujarati), University Granth Nirmal Board, A'bad.
3. Gujarati D.(1970) : Basic Econometrics, Mac-Graw Hills.
4. Johnston J.(1982).: Econometrics method, Mac-Graw hills and McGraw-Hill Education.