Kakatiya University, Warangal
B.A/B.Sc. (Statistics) II Year, Semester-III
(CBCS)(With Mathematics Combination)
(Examination at the end of II Year, Sem-III)

SEC-1
Computation using MS-Excel
(2 HPW :: 2 Credits :: 50 Marks)

Unit-I

Introduction to MS-Excel sheet, Statistical functions in it and writing formula in the Excel sheet. Computation of the Statistical functions FACT, MMULT, MINV, GCD, LCM, LN, LOG10, MOD, POWER, ROUND, SQRT, SUM, PRODUCT, TRUNK, AVEDEV, AVERAGE, AVERAGEIF, AVERAGEIFS, GEOMEAN, HARMEAN, MEDIAN, SMALL, MODE, PERMUT, PERCENTILE, QUARTILE, DEVSQ, COVAR, STANDARDIZE, STDEV, SKEW, KURT and their interpretation.
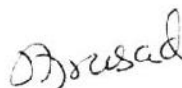
Unit- II

Computation of the Statistical functions: RSQ, CHIDIST, CHIINV, CHITEST, FDIST, FINV, FORECAST, CONFIDENCE, NORMDIST, NORMINV, NORMSDIST, NORMSINV, RANK, TDIST, TINV, TREND, TRIMMEAN, TTEST, VAR, ZTEST and their interpretation.

List of Reference Books:

1. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC, PHI.

2. Gerald Keller: Applied Statistics with Microsoft excel, Duxbury, Thomson Learning.

3. Levine, Stephen, Krehbiel, Berenson: Statistics for Managers using Microsoft Excel (4th edition), Pearson Publication.

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B.A/B.Sc. (Statistics) II Year, Semester-III
(CBCS)(With Mathematics Combination)
(Examination at the end of II Year, Sem-III)

Paper-III: Statistical Methods (DSC-2C)
(4 HPW :: 4 Credits :: 100 Marks)

Unit-I

Population correlation co-efficient and its properties. Bivariate data, scattered diagram, sample correlation co-efficient, computation of correlation co-efficient for grouped data. Correlation ratio, Spearman's rank correlation co-efficient and its properties. Principle of least squares, simple linear regression, correlation verses regression, properties of regression coefficients. Concepts and computation of Partial and Multiple correlation co-efficients (for 3 variables only).

Unit-II

Fitting of quadratic and power curves. Analysis of categorical data, independence, association and partial association of attributes, various measures of association (Yule's) for two way data and co-efficient of contingency (Pearson and Tcherprow), co-efficient of colligation.
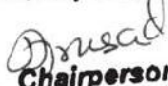
Unit-III

Concepts of population, parameter, random sample, statistic, sampling distribution and standard error. Standard error of sample mean(s) and sample proportion(s). Exact sampling distributions-Statement and properties of χ^2, t and F distributions and their interrelationships. Independence of sample mean and variance in random sampling from normal distributions.

Unit-IV

Point estimation of a parameter, concept of bias and meansquare error of an estimate. Criteria of good estimator- consistency, unbiasedness, efficiency and sufficiency with examples. Statement of Neyman's Factorization theorem, derivations of sufficient statistics in case of Binomial, Poisson, Normal and Exponential (one parameter only) distributions. Estimation by method of moments, Maximum likelihood (ML), statements of asymptotic properties of MLE. Concept of interval estimation. Confidence intervals of the parameters of normal population by Pivot method.

List of reference books:

1. Hogg and Craig: Introduction to Mathematical statistics, Prentice Hall.

2. Goon A M, Gupta M K, Das Gupta B : Fundamentals of Statistics, (Vol-I), The World Press (Pvt) Ltd., Kolkata.

3. Hoel P.G: Introduction to Mathematical Statistics, Asia Publishing house.

4. Sanjay Arora and Bansilal: New Mathematical Statistics, Satya Prakashan , New Delhi.

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5. V. K. Kapoor and S. C. Gupta: Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi.

6. Hogg,Tanis, Rao: Probability and Statistical Inference, (7th edition), Pearson.

7. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC, PHI.

8. Gerald Keller: Applied Statistics with Microsoft Excel, Duxbury, Thomson Learning.

9. Levine, Stephen, Krehbiel, Berenson: Statistics for Managers using Microsoft Excel (4th edition), Pearson Publication.

10. Siegal, S and Sidney: Non-parametric statistics for behavioral Science, McGraw hill.

11. Gibbons J.D and Subhabrata Chakraborti: Non-parametric Statistical Inference, Marcel Dekker.

12. Parimal Mukhopadhyay: Mathematical Statistics, New Central Book Agency.

13. Conover: Practical Non-parametric Statistics, Wiley Series.

14. V.K.Rohatgi and A.K.Md. Ehsanes Saleh: An introduction to Probability and Statistics, Wiley Series.

15. Mood A M, Graybill F A, Boe's D C: Introduction to theory of Statistics, TMH.

16. Telugu Academy: Paramitiya Mariyu Aparamitiya Parikshalu.

17. Milton and Arnold: Introduction to Probability and Statistics, (4th edition), Tata McGraw hill Publication.
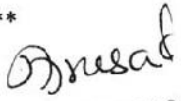
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Brasad

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Practical-3
Statistical Methods
(2 HPW :: 1 Credit :: 50 Marks)

1. Generation of random samples from Uniform (0,1), Uniform (a,b) and exponential distributions.

2. Generation of random samples from Normal and Poisson distributions.

3. **Simulation of random samples from Uniform (0,1), Uniform (a,b),Exponential, Normal and Poisson distributions using MS-Excel.**

4. Fitting of straight line and parabola by the method of least squares.

5. **Fitting of straight line and parabola by the method of least squares using MS-Excel.**

6. Fitting of power curves of the type $y= ax^b$, $y=ab^x$ and $y=ae^{bx}$ by the method of least squares.

7. **Fitting of power curves of the type $y= ax^b$, $y=ab^x$ and $y=ae^{bx}$ by the method of least squares using MS Excel.**

8. Computation of Yule's coefficient of association.

9. Computation of Pearson's, Tcherprows coefficient of contingency.

10. Computation of correlation coefficient and regression lines for ungrouped data.

11. Computation of correlation coefficient, forming regression lines for grouped data.

12. **Computation of correlation coefficient, forming regression lines using MS-Excel.**

13. Computation of multiple and partial correlation coefficients.

14. **Computation of multiple and partial correlation coefficients using MS-Excel.**

15. Computation of correlation ratio.

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