

SRI VENKATESWARA UNIVERSITY : TIRUPATI

STATISTICS SYLLABUS (II YEAR)

Semester – III (CBCS With Maths Combination Common to BA/BSc)

Paper – III : Statistical Methods

UNIT - I

Correlation : Meaning, Types of Correlation, Measures of Correlation : Scatter diagram, Coefficient of Correlation , Rank Correlation Coefficient (with and without ties), Bi-variate frequency distribution, correlation coefficient for bi-variate data and simple problems.

UNIT - II

Correlation Ratio : Measurements, Partial and Multiple correlation coefficients with simple problems. Linear Regression: Regression lines, Regression coefficients and it's properties, Regressions lines for bi-variate date and simple problems.

UNIT - III

Curve fitting: Principals of least squares, Fitting of straight line ($y = a + b x$), Fitting of Second degree polynomial or parabola ($y = a + b x + c x^2$), Fitting of power curve ($y = a x^b$) and exponential curves of type i) $y = a e^{b x}$ and ii) $y = a b^x$ with problems.

UNIT – IV

Attributes : Notations, Class, Order of class frequencies, Ultimate class frequencies, Consistency of data, Conditions for consistency of data for 2 and 3 attributes only , Independence of attributes , Association of attributes and its measures, Relationship between association and colligation of attributes, Contingency table: Square contingency(χ^2), Mean square contingency(Φ^2), Coefficient of mean square contingency (C), Tschuprow's coefficient of contingency (τ^2).

UNIT - V

Basic concepts: Population, Sample, Parameter, statistic, Sampling distribution, Standard error. Definition and properties of Student t- distribution, F – Distribution, χ^2 Distributions and its applications, interrelationships.

Reference Books:

1. Fundamentals of mathematical statistics: S.C.Guptha and V.K. Kapoor
2. Outlines of statistics, Vol II: Goon Guptha, M.K.Guptha and Das Guptha B
3. Introduction to mathematical Statistical : Hoel P.G
4. BA/BSc II year statistics- Statistical methods and inference- Telugu Academy
5. Statistics Made simple Do it yourself on PC By K.V.S. Sarma
6. Applied Statistics with Microsoft Excel By Gerald Keller

2020/2016
30/11/2016

Practical Paper - III

1. Calculation of Correlation coefficient for un grouped data (Direct method)
2. Calculation of Correlation coefficient for un grouped data (Indirect method)
3. Calculation of Correlation coefficient for Bi-variate data
4. Calculation of Rank correlation coefficient with and without ties
5. Construction of two regressions lines for un grouped data
6. Construction of two regressions lines for Bi-variate data
7. Calculation of Multiple Correlation coefficients.
8. Calculation of Partial Correlation coefficients.
9. Fitting of straight line $y = a + b x$
10. Fitting of second degree polynomial or parabola $y = a + b x + c x^2$
11. Fitting of exponential curve $y = a e^{b x}$
12. Fitting of curve $y = a b^x$
13. Fitting of power curve $y = a x^b$
14. Calculation of Yule's coefficient of association and colligation
15. Calculation of Coefficient of mean square contingency (C), Tschuprow's coefficient of contingency (τ^2).

Note : The above practical are to be done using M S Excel and SPSS Package where ever it is possible

Qaeant
30/11/2016

UNIT -IV

15. Define consistency of the data. Discuss the conditions for consistency of the data?

OR

16. Discuss about association and colligation of two attributes.

UNIT - V

17. What is t- distribution and write down the properties.

OR

18. What is χ^2 - distribution and write its applications.

Qaeant
30/11/2016

SRI VENKATESWARA UNIVERSITY : TIRUPATI

STATISTICS SYLLABUS (II YEAR)

Semester – IV (CBCS With Maths Combination Common to BA/BSc)

Paper – IV : Statistical Inference

UNIT - I

Estimation : Estimate and Estimator, Point Estimation and Interval Estimation, Criteria of good estimators: Unbiasedness, Consistency, Efficiency and Sufficiency, with examples, Statement of Neymann Factorization theorem. Estimation methods: Method of Maximum likelihood estimation, Method of moments and its properties with examples. Interval Estimation: Confidence limits for mean μ and variance σ^2 .

UNIT - II

Testing of Hypothesis: Hypothesis, Null hypothesis and Alternative Hypothesis, Simple and composite hypothesis, Critical region, One tailed and Two tailed tests, Two Types of Errors, Level of significance, Power of the test and simple problems, Neyman Pearson's Lemma, problems in case of Binomial Distribution, Poisson Distribution and Normal Distribution.

UNIT - III

Large Sample Tests: Single Mean and Difference between Two means test, Single proportion and Difference between Two proportions test, Difference between Two Standard Deviations test, Fisher's Z- Transformation: Single correlation coefficient and Difference between Two correlation coefficients and problems.

UNIT - IV

Small Sample Tests: Single mean test and Difference between Two means test, Paired t- test. F - test. χ^2 - test: Single variance test, Goodness of fit of B.D and P.D, 2X2 contingency test, Independence of attributes test and problems.

UNIT – V

Non-Parametric Test: Definition, Assumptions, Advantages, disadvantages, Uses, Sign test for one and two samples one and two samples, Run test for, Wilcoxon's signed rank test , Median test for two samples only, Mann Whitney U – test and problems.

Reference Books:

1. Fundamentals of mathematical statistics: S.C.Guptha and V.K. Kapoor
2. Outlines of statistics, Vol II: Goon Guptha, M.K.Guptha and Das Guptha B
3. Introduction to mathematical Statistical : Hoel P.G
4. Statistical methods and inference BA/BSc II year statistics - Telugu Academy
5. Statistics Made simple Do it yourself on PC By K.V.S. Sarma
6. Applied Statistics with Microsoft Excel By Gerald Keller

20/11/2016

Practical Paper - IV

1. Single mean test for Large samples.
2. Difference between two means test for Large samples
3. Difference between two standard deviations test for Large samples
4. Single Proportion test for Large samples
5. Difference between two Proportions test for large samples
6. Single Correlation coefficient test for large samples
7. Difference between two Correlation coefficients test for large samples
8. Single mean test for Small samples
9. Difference between two means test for small samples
10. Paired t- test
11. F-Test or Difference between two variances test for small samples
12. χ^2 – Test for single sample variance
13. χ^2 – Test for goodness of fit of B.D
14. χ^2 – Test for goodness of fit of P.D
15. χ^2 – Test for independence of attributes
16. Sign test
17. Run test
18. Median test

Note : The above practical are to be done using M S Excel and SPSS Package where ever it is possible

Qasim
30/11/2016

THREE YEAR B.A. / B.Sc DEGREE EXAMINATION

CBCS - FOURTH SEMESTER

Part - II - STATISTICS (WM)

Paper IV : Statistical Inference

New syllabus w.e.f. 2015 - 16

MODEL PAPER

Max. Marks: 75

Times: 3 Hours

PART - A

Answer any **FIVE** questions. **Each** question carries equal marks

5x5=25 marks

1. Show that Sample mean is always an U.B.E of Population mean.
2. Explain the concept of M.L.E.
3. Explain briefly i) Simple Hypothesis ii) Composite Hypothesis with suitable examples.
4. Explain briefly i) Null and Alternative Hypothesis and ii) Critical Region.
5. A coin is tossed at random 400 times and head turns up 240 times. Can the coin be regarded as unbiased?
6. Explain the test procedure for paired t-test.
7. χ^2 - test for 2x2 contingency table.
8. Advantages and Disadvantages of Non-Parametric Tests.

PART - B

Answer ALL questions, each question carries equal marks

5x10=50 marks

UNIT - I

9. Explain the criteria's of good estimator with examples.

OR

10. Find $100(1-\alpha)\%$ Confidence intervals for the parameters i) μ and ii) σ^2 , of the normal distribution.

UNIT - II

11. State and Prove NP-Lemma.

OR

12. Discuss the terms with suitable examples i) Type-I error ii) Type- II error iii) power of the test.

UNIT - III

13. Describe the test procedure for single and two sample proportions.

OR

14. Describe the test procedure for single and two sample Means.

200002
30/11/2016

UNIT - IV

15. χ^2 - test for Independent of Attributes.

OR

16. The heights of six randomly chosen sailors are in inches: 63, 65, 68, 69, 71, 72. Those of 10 randomly chosen soldiers are 61, 62, 65, 66, 69, 69, 70, 71, 72, 73. Discuss in the light that these data throw on the suggestion that sailors are on the average taller than soldiers.

UNIT - V

17. Describe Run test for two samples also for large case.

OR

18. Elucidate two samples median test.

Qaeant
30/11/2016