

**SRI VENKATESWARA UNIVERSITY : TIRUPATI**  
**STATISTICS SYLLABUS (II YEAR)**  
**SEMESTER – III** (CBCS Non Maths Combination BA)  
**Paper – III : Statistical Methods**

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**UNIT - I**

Moments: Definition, Types of moments: Central and Non-central moments. Sheppard's Correction for moments. Skewness and Kurtosis : Definition, Types and its measures with simple problems

**UNIT - II**

Attributes: Notations, Class, Order of class frequencies, Ultimate class frequencies, Consistency of the data, Conditions for consistency of data for 2 and 3 attributes only , Independence of attributes , Association of attributes and its measures, Contingency table and its coefficients: Square contingency( $\chi^2$ ), Mean square contingency( $\Phi^2$ ), Coefficient of mean square contingency (C), Tschuprow's coefficient of contingency ( $\tau^2$ ).

**UNIT – III**

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

**UNIT - IV**

Correlation: Definition, Types of Correlation. Measures of Correlation: Scatter diagram, Coefficient of correlation, Rank Correlation Coefficient (with and without ties). Linear Regression: Regression lines, Regression coefficients and its properties, Regressions lines for Un grouped data and simple problems(without proofs).

**UNIT - V**

Interpolation: Definition, Binomial expansion method and Graphic method. Methods of interpolation: Statement of Newton's forward formula, Newton's Backward formula, Lagrange's formula and simple problems on it.

**Reference Books:**

1. Fundamentals of mathematical statistics: S.C.Guptha and V.K. Kapoor
2. An outlines of statistics, Vol II: Goon Guptha, M.K.Guptha and Das Guptha B
3. Basic statistics By B.N Aggrawal
4. Statistical method by S.P. Gupta
5. Fundamentals of Statistics by S.C. Gupta
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

*2020/2016*  
30/11/2016

### Practical Paper - III

1. Calculation of Central Moments
2. Calculation of Karlpearson's coefficient of skewness
3. Calculation of Bowley's Coefficient of skewness
4. Calculation of Correlation coefficient for un groped data
5. Calculation of Rank Correlation coefficient with ties for un grouped data
6. Calculation of Rank correlation coefficient without ties for un grouped data
7. Construction of two regressions lines for un grouped data
8. Fitting of straight line  $y = a + b x$
9. Fitting of second degree polynomial or parabola  $y = a + b x + c x^2$
10. Fitting of exponential curve  $y = a e^{b x}$
11. Fitting of curve  $y = a b^x$
12. Fitting of power curve  $y = a x^b$
13. Calculation of Yule's coefficient of association and colligation
14. Calculation of Coefficient of mean square contingency (C), Tschuprow's coefficient of contingency ( $\tau^2$ ).
15. Newton's forward formula
16. Newton's backward formula
17. Lagrange's formula

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

*Deena*  
30/11/2016

QP code: 1-3-121

**THREE YEAR BA DEGREE EXIMATIONS**  
**CBCS – THIRD SEMESTER**  
**Part – II STATISTICS (Non - Maths)**  
**Paper III : Random Variables and Probability Distributions**  
**New Syllabus w.e.f.2015-16**  
**Model Paper**

**Time : 3 hours**

**Max. Marks :75**

**PART - A**

Answer any FIVE questions, each question carries 5 marks **(5x5=25)**

1. Define probability density function (pdf).
2. Define the following terms  
a) Random Experiment    b) Sample space    c) Equally likely events.
3. Explain types of Random variable and its properties.
4. Define Mathematical Expectations and its properties
5. Define Moment generating function and its properties
6. Define poisson distribution and give its properties
7. Define Geometric distribution and also give its properties.
8. Give the applications of Normal distribution.

**PART – B**

Answer any ONE question from each unit, each question carries 10 Marks

**(5x10=50)**

**UNIT – I**

9. State and prove Addition theorem on probability for two events.  
(or)
10. A box contains 7 red, 3 green and 5 yellow balls, if 3 balls are drawn randomly from the box.  
Find the probability that drawn balls are of  
a) different colours                      b) red colour

**UNIT – II**

11. Explain the distribution Function and also give its properties.  
(or)
12. A random variable (r.v) 'X' has the following probability function.

X:	0	1	2	3	4	5	6	7
P(X):	0	K	2k	2k	3k	K <sup>2</sup>	2K <sup>2</sup>	7K <sup>2</sup> +k

- a) find 'k' value and                      b) P(x<6)

*2020/2021*  
*30/11/2016*

