SRI VENKATESWARA UNIVERSITY :: TIRUPATI
FIRST YEAR B.A. / B.Sc. STATISTICS (WITH MATHS)FIRST SEMESTER

Revised Syllabus under CBCS W.E.F. 2020-21

Paper - I: DESCRIPTIVE STATISTICS AND PROBABILITY

UNIT-I

Introduction to Statistics: Concepts of primary and secondary data. Diagrammatic and graphical representation of data: Histogram, frequency polygon, Ogives, Pie. Measures of Central Tendency: Mean, Median, Mode, Geometric Mean and Harmonic Mean. Median and Mode through graph.

UNIT-II

Measures of Dispersion: Range, Quartile Deviation, Mean Deviation and Standard Deviation, Variance. Central and Non-Central moments and their interrelationship. Sheppard's correction for moments. Skewness and kurtosis.

UNIT-III

Introduction to Probability: Basic Concepts of Probability, random experiments, trial, outcome, sample space, event, mutually exclusive and exhaustive events, equally likely and favourable outcomes. Mathematical, Statistical, axiomatic definitions of probability. Conditional Probability and independence of events, Addition and multiplication theorems of probability for 2 and for n events. Boole's inequality and Baye's theorem and its applications in real life problems.

UNIT-IV

Random variable: Definition of random variable, discrete and continuous random variables, functions of random variable. Probability mass function. Probability density function, Distribution function and its properties.Simple Problems Bivariate random variable - meaning, joint, marginal and conditional Distributions, independence of random variables and simple problems.

UNIT-V

Mathematical expectation : Mathematical expectation of a random variable and its Properties Moments and covariance using mathematical expectation with examples. Addition and Multiplication theorems on expectation. Definitions of M.G.F, C.G.F, P.G.F, C.F and their

properties. Chebyshev and Cauchy - Schwartz inequalities.

Practicals - Paper- 1

1. Sub Divided and Percentage Bar Diagrams
2. Pie or circular Diagrams(for two graphs)
3. Construction of Histogram and frequency polygon
4. Construction of Ogive curves
5. Computation of Mean, Median and Mode for grouped data
6. Computations of Geometric Mean and Harmonic mean for grouped data
7. Computation of Quartile Deviation and Range for grouped data
8. Computation of Mean deviation, Standard Deviation and coefficient ofvariation for grouped data
9. Determination of Consistency (For two types of grouped data)
10. Computation of Karl pearson's and Bowley's coefficient of skewness
11. Computation of non-central, central moments, $\beta 1$, $\beta 2$, $\Upsilon 1$ and $\Upsilon 2$ forgrouped data.
12. Computation of non-central, central moments, $\beta 1$, $\beta 2$, $\Upsilon 1$ and $\Upsilon 2$and Sheppard's corrections forgrouped data.