# B.A. /B.Sc. FIRST SEMESTER Descriptive Statistics 

## M.M-100 (Theory= $=90$ \& Attendance=10)

## UNIT- I

Concept of Statistical Population and Sample from a population. Types of data-primary and secondary data, qualitative and quantitative data. Methods of collecting data. Diagrammatic and graphical representation of data-Bar diagram, Histogram, Frequency polygon and O-give curve.

## UNIT- II

Measures of central tendency or location (Arithmetic mean, median, mode, geometric mean and harmonic mean). Characteristics of a good average. Relationship between various measures of location and their applications. Merits and demerits of these measures. Dispersion: Relative and absolute measures (Range, Quartile Deviation, Mean Deviation and standard Deviation). Coefficient of variation and its applications.

## UNIT- III

Skewness, Kurtosis and their measures including those based on quartiles. Moments, relation between central moments in terms of raw moments and vice-versa. Effect of change of scale and origin on moments. Sheppard's correction for grouping errors. Coefficients based on moments ( $\alpha, \beta \& \gamma$ coefficients).

## UNIT- IV

Bivariate Data: Concept of correlation and its types. Scatter diagram method and product moment method of studying correlation. Properties of a correlation coefficient (limits of the correlation coefficient, effect of change of origin and scale).Concept of rank correlation, derivation of Spearman's rank correlation coefficient and its limits.
Principal of least squares and fitting of first-degree polynomial and parabola. Meaning of regression, derivation of two regression lines. Regression coefficients and their properties.

## REFERENCES

1. Bhat B.R, Srivenkatramana $T$ and Rao Madhava K.S (1997): Statistics: A. Beginner's Text, Vol 1., New Age International (P) Ltd.
2. Croxton F. E, Cowden D.J and Kelin S (1973): Applied General Statistic, Prentice Hall of India.
3. Spiegel, M.R. (1967): Theory \& Problems of Statistics, Schaum's Publishing Series
4. S.C Gupta and V.K Kapoor(2007): Fundamentals of Mathematical Statistics. $11^{\text {th }}$ edition(reprint) Sultan Chand and sons.
5. S.P.Gupta: Statistical Methods. Sultan Chand and sons.

## B.A./B.Sc. SECOND SEMISTER (Practical)

M.M: 50

1. Evaluation of Probabilities using Addition law.
2. Evaluation of Probabilities using Multiplication law.
3. Evaluation of Probabilities using Bayes' theorem.
4. Fitting of Binomial distribution.
5. Fitting of Poisson distributions.
6. Fitting of Normal distribution.

