

# AMBT05 BIOSTATISTICS

## UNIT-1 PRESENTATION OF DATA

Frequency distribution, graphical presentation of data by histogram, frequency curve and cumulative frequency curves.

## UNIT-2 MEASURE OF LOCATION AND DISPERSION

Mean, Medium, Mode and their simple properties (without derivation) and calculation of median by graphs: range, mean deviation, Standard deviation, Coefficient of variation.

## UNIT-3 PROBABILITY AND DISTRIBUTION

Random distributions, events-exhaustive, mutually exclusive and equally likely, definition of probability (with simple exercises), definition of binomial, Poisson and normal distributions and their inter-relations, Simple properties of the above distributions (without derivation).

## UNIT-4 CORRELATION AND REGRESSION

Bivariate data – simple correlation and regression coefficients and their relation, Limits of correlation coefficient, Effect of change of origin and scale on correlation coefficient, Linear regression and equations of line of regression, Association and independence of attributes.

## UNIT-5 SAMPLING

Concept of population and sample, Random sample, Methods of taking a simple random sample.

## UNIT-6 TESTS OF SIGNIFICANCE

Sampling distribution of mean and standard error, Large sample tests (test for an assumed mean and equality of two population means with known S.D.); small sample tests (t-test for an assumed mean and equality of means of two populations when sample observations are independent, Paired and unpaired t-test for correlation and regression coefficients, T-test for comparison of variances of two populations, Chi-square test for independence of attributes, Goodness of fit and homogeneity of samples.

## UNIT-7 EXPERIMENTAL DESIGNS

Principles of experimental designs, Completely randomized, Randomized block and latin square designs, Simple factorial experiments of 2<sup>2</sup>, 2<sup>3</sup>, 2<sup>4</sup> and 2<sup>32</sup> types, Confounding in factorial experiments (mathematical derivations not required); Analysis of variance (ANOVA) and its use in the analysis of RBD.

## Reference Books

1. Statistical methods in biology by Norman T.J. Bailey (3rd Edition), Cambridge University Press (1995).