CE 101 B Basic Statistics - I

Objective: - Students should be acquainted with the initial requirements of applied statistical tools.

1. Linear Correlation and Association of Attributes : [25%]

Concept of bivariate data, Definition and types of correlation, Definition of correlation coefficient(r), its properties, and interpretation of values of r, Methods of finding correlation coefficient by using Karl Pearson method for bi-variate data and for frequency distribution data, Spearman's method for finding rank correlation coefficient for repeated and non repeated ranks. Concept of qualitative data and the association between them, Meaning and interpretation of 2×2 contingency table, Types of association between attributes, Methods of obtaining nature of association by using comparison between observed and expected frequency, Coefficient of association by using Yule's method and its interpretations, Example on 2×2 problems only.

2. Business Forecasting : [25%]

Meaning and uses of business forecasting, Different methods of forecasting (i) Theoretical explanation of Regression analysis, Index numbers Economic models, Input output models, Opinion poll method, Extrapolation, Graphical method. (ii) Theoretical explanation with numerical examples of - Least Square Method for linear and quadratic relationship between variables, smoothing linear trend method.

3. Demographic Statistics : [25%]

Meaning, definition and uses of demographic statistic, Methods of collecting demographic statistics – registration method, census method, analytical method. Mortality rates pertaining to (i) CDR (ii) SDR (iii) IMR, Birth rates pertaining to (i) CBR, (ii) SBR (iii) Age specific birth rate, Fertility rates pertaining to (i) GFR, (ii) SFR (iii) TFR

4. Matrix Algebra : [25%]

Definition of Matrix, Different types of matrices, Algebra of matrices (Addition, Subtraction and Multiplication), Determinant of a square matrix, Definition of ad-joint of a matrix, inverse of a matrix and its uses to solve simultaneous linear

equations (up to three variables only), Use of matrix in simple business applications.

Recommended Reading :

1. Ken Black, Business Statistics, John Wiley & Sons (Asia) Pte Ltd. Singapore
2. J. K. Sharma, Business Statistics, Pearson, New Delhi.
3. Sancheti & Kapoor, Business Statistics, Sultan Chand & Sons, New Delhi.
4. Srivatava O.S.: A Text Book of Demography, Vikas publishing.
5. Trivedi and Trivedi: Business Mathematics, Pearson India Ltd. New Delhi.