

APPLIED STATISTICS (GENERAL)

1. Theory of attributes :
 - 1.1. Notation and Terminology, Classification according to attributes, Order of classes (upto 3 attributes), Dichotomy.
 - 1.2. Class frequencies, Positive class frequencies, Negative class frequencies and contra class frequencies, Ultimate order class frequencies.
 - 1.3. Relationship among different class frequencies, Method of operators (upto 3 attributes).
 - 1.4. Fundamental set of class frequencies.
 - 1.5. Concept of association, dis-association and independence.
 - 1.6. Yule's coefficient of Association (Q). Interpretation.
 - 1.7. Examples & Problems.
2. Correlation : (For ungrouped data)
 - 2.1. Concept of bivariate data correlation between two variables.
 - 2.2. Positive, negative and absence of correlation with examples.
 - 2.3. Scatter diagram method.
 - 2.4. Karl pearson's correlation coefficient (r) : Definition, Computation and Interpretation.
 - 2.5. Concept of Rank correlation : Spearman's rank correlation coefficient, Definition, Computation and Interpretation (without ties).
 - 2.6. Examples and Problems.
3. Regression : (for ungrouped data).
 - 3.1. Concept of Regression Statement of Regression equations. Definition of Regression Coefficients, Relationship between correlation coefficient and regression coefficients. Restrictions on the values of regression coefficients.
 - 3.2. Coefficient of Determination & its Interpretation.
 - 3.3. Fitting of Regression lines and estimation.
 - 3.4. Determination of mean values from Regression equations.
 - 3.5. Examples and Problems.

4. Index Numbers (II).

- 4.1 Cost of living index numbers meaning, Utility, construction, precautions i) Family Budget method.
ii) Aggregate expenditure method (By using Arithmetic mean only).
- 4.2. Fixed base and chain base I.Nos. Base shifting, Deflation, Purchasing power of money.
- 4.3. Weighted mean of Index numbers.
- 4.4. Examples & Problems.

-x-x-x-x END OF FIRST TERM -x-x-x-x-x-x

5. Statistical Quality Control : (SQC)

- 5.1. Meaning Utility and purposes of SQC.
- 5.2. Statistical process control, lot control.
- 5.3. Chance causes and assignable causes of variations.
- 5.4. meaning and types of control Charts.
- 5.5. Construction of X and R charts.
- 5.6. Examples and Problems.

6. Sample Surveys :

- 6.1. Concept of population, Sample, Sample frame, Sampling unit.
- 6.2. Objective of Sample survey.
- 6.3. Designing a questionnaire characteristics of a good questionnaire.
- 6.4. Sampling and non sampling errors.
- 6.5. Methods of Sampling, Simple Random Sampling, Stratified random sampling, Systematic sampling and their illustrations. (Mathematical treatment is not expected).
- 6.6. Problems on designing a simple sample survey.

7. Sequencing Problem :-

- 7.1. Statement of a sequencing problems of two machines & n jobs, (Algebraic method only).
- 7.2. Calculation of total time elapsed, idle time of machine.
- 7.3. Examples and Problems.

8. Set Theory :-

- 8.1. Meaning of a set, Methods of describing a set.
- 8.2. Types of sets : Null set, subset, Universal set, Disjoint set, Complement of set, with illustrations.
- 8.3. Operations on set : Equality of two sets, Intersection, Union of sets (Atmost three sets).
- 8.4. Simple numerical problem

Special Note : Students are allowed to answer in Marathi also.

REFERENCE BOOKS :-

- 1. Statistical methods by S.P. Gupta.
- 2. Business statistics by S.C. Gupta, Indra Gupta.
- 3. Operations Research by P.K. Gupta, D.S. Hira.