STATISTICS ELECTIVE PAPER 101 (PAPER 1)

FUNDAMENTAL OF STATISTICS

1. Statistics, Primary and Secondary data, Classification and Tabulation of data:

Definition of statistics, Concept of primary and secondary data. Methods of collecting primary data: Direct investigation, indirect investigation, Information through local agencies, mailed Questionnaire, Framing of questionnaire, Source of secondary data.Concept of classification, types and importance of classification, concept of tabulation, types of tabulation. Types of statistical variable. Formulation of discrete and continuous series for univariate and bivariate data.

2. Graphs and Diagrams:

Representation of statistical data on (1) Histogram (2) Frequency poloygon (3) Frequency curve (Ogive curve). To obtain median, mode, quartiles, decilies, percentiles, from the above graph, simple examples.

3. Measure of Central Tendency:

Meaning of central tendency, various. Measure of central tendency: A.M., Median, Mode, Their merits and demerits, Simple examples of Mean, Median and Mode. Various Measure of central tendency: Quartiles, deciles, percentiles. Their merits and demerits, Simple examples.

4. Measure of Dispersion and Skewness:

Definition of dispersion, Measures of dispersion. Simple examples to find various measures of dispersion by different methods (Range, Q.D., M.D., sd) for grouped and ungrouped data. Meaning of Skewness, Test of skewness, Measure of Skewness, Karl pearson's and Bowleys method to measure the skewness.

Reference books:

(1) D.S.Sancheti & V.K.Kapoor: Statistics:Theory,Method&Application" Sultan chand & Sons,New delhi.
(2) D.N.Elhance:Fundamentals of statistics"
(3) Goon,Gupta,Dasgupta: An outline of statistical Theory"Vol1 and 2, Wordd press,Calcutta.

Activities:

(1)Project on Graph and digram
(2)Presentation on Measure of central tendency,dispersion and skewness.
(3)Assignement on above Four units.
(4)Ict on Graph and digram
(5)Group Discussion

F.Y.B.A. SEMESTER-1

STATISTICS ELECTIVE PAPER 102 (PAPER 2)

APPLIED STATISTICS- I

1. Population Census:

Methods of population census and it uses. Study of India's population census. Limits of population census. Meaning and scope of demography, use of demographic statistics.

2. Demography Methods:

Method of collecting demographic statistics: Death rates, Crude death rate (C.D.R.) and standardized Death Rate (S.D.R.) Examples to find C.D.R., S.D.R., and to compare the healthiness of cities. Meaning of Infant Mortality Rate (I.M.R.), Crude birth rate (C.B.R.), Meaning of fertility rate, General Fertility Rate (G.F.R.), Specific Fertility Rate (S.F.R.) and total fertility rate (T.F.R.), Simple examples.

3. Time Series:

Meaning of Time series, various components of time series: Trend, Seasonal, Cyclic and Random components. Methods of measuring Trend by (a) Graphical method (b) Moving average method, (c) Least squares method. Concept of principle of least squares, Curve fitting of linear and quadratic, functi ons by the principle of least squares and to estimate or to obtain trend for simple numerical data. Seasonal indices and simple examples to obtain seasonal indices.

4. Index Numbers:

Defintion, Limitations and uses of Index numbers. Construction of wholesale price index number and cost of living index number, Constuction of index number by aggregate expenditure method and family budget method using Laspeyres, Paasches and Fishers Formula.

Reference Books:

(1)S.C.Gupta & V.K.kapoor :Fundamental of applied statistics Sultan chand & sons New delhi.
(2)Sancheti & Kapoor: Business Mathematics"Sultan chand & Sons,New delhi.
(3)Kapoor V.K.: Business Mathematics"Sultan chand & Sons,New delhi.
(4)parimal Mukhopadhyay:Mathematical Statistics" Books & allied (p) Ltd.

Activites:
(1) Seminar on Demography
(2)Lecture on scope and benift on statistics.
 (3)Assignement on above Four units.
(4)Study tour
 (5)Group Discussion on above Four units

F.Y.B.A. SEMESTER-2

STATISTICS ELECTIVE PAPER 111 (PAPER 1)

MATHEMATICAL STATISTICS

1. Function, Limit and Permutation and Combinations:

Concept of function of a single variable (Linear, Quadratic and exponential function only) Domain, Co-domain and Range of a Function. Types of a function. Simple example of a function.Concept of Limit, Rules of limit (Without proof) Simple examples of limit. Basic idea of permutations and combinations with simple illustrations. Formula for nPr and nCr (Without proof) with examples.

2. Probability:

Definition of Random Experiment, Sample Space, Events, Mutually exclusive events, Exhaustive events, Dependent events and Independent events, Mathematical and Statistical definition of probability, Theorems of addition and multiplication laws of probability(Without proof) conditioned probability with Simple examples.

3. Mathematical Expectation:

Concept of a discrete random variable, p.m.f. of a discrete r.v. and its properties, definition of mathematical expectation of a discrete r.v. Mathematical expectations of sum and product of two independent and dependent r.v. (without Proof) and its properties, Simple examples

4. Moments:

Definition of row and central moments of a discrete r.v. up to order four. The relationship of raw moments with central moment (Without Proof). Numerical examples.

Reference Books:

(1)S.C.Gupta & V.K.kapoor :Fundamental of applied statistics Sultan chand & sons New delhi(2007)
(2)Sancheti & Kapoor: Business Mathematics"Sultan chand & Sons,New delhi.
(3)Kapoor V.K.: Business Mathematics"Sultan chand & Sons,New delhi.
(4)parimal Mukhopadhyay:Mathematical Statistics" Books & allied (p) Ltd.(2000).

Activites:

(1)Project on probability.
(2)presentation on Mathematical expection.
(3)Assignement on above Four units.
(4)Ict on bisag.
 (5)Group Discussion on above Four units.

F.Y.B.A. SEMESTER-2

STATISTICS ELECTIVE PAPER 112 (PAPER 2)

APPLIED STATISTICS- II

1. Sampling Methods:
Concept of population survey and sample survey, Characteristics of a good sample. The importance of size of a sample. Meaning of sampling (With replacement and without replacement). Method of sampling- Simple random sampling and its simple numerical examples upto 3 strata.

2. Analysis of Variance:
Definition of ANOVA, Uses of ANOVA, Only One -Way Classification.

3. Probability Distribution-I:
Concept of probability mass function and probability density function: Binomial distribution and Poisson distribution. Mean and variance, application, Properties of these distributions (Without proof) and Simple examples based on these distributions.

4. Probability Distribution-II:
Normal distribution and Negative Binomial distribution Mean and variance, application, Properties of these distributions (Without proof) and Simple examples based on these distributions.

Reference Books:

(1)S.C.Gupta & V.K.kapoor :Fundamental of applied statistics Sultan chand & sons New delhi.
(2) D.S.Sancheti & V.K.Kapoor: Statistics:Theory,Method&Application" Sultan chand & Sons,New delhi.
(3)Goon,Gupta,Dagupta: An outline of statistical Theory" Vol 1&2 World press, Calcutta.

Activites:

(1)Project on Analysis of variance.
(2)Seminar on probability distribution.
(3)Assignement on above Four units.
(4) Quiz on above Four units.
 (5)Group Discussion on above Four units.

1. Statistics, Primary and Secondary data, Classification and Tabulation of data:

Definition of statistics, Concept of primary and secondary data. Methods of collecting primary data: Direct investigation, indirect investigation, Information through local agencies, mailed Questionnaire, Framing of questionnaire, Source of secondary data. Concept of classification, types and importance of classification, concept of tabulation, types of tabulation. Types of statistical variable. Formulation of discrete and continuous series for univariate and bivariate data.

2. Measure of Central Tendency:

Meaning of central tendency, various. Measure of central tendency: A.M., Median, Mode, Their merits and demerits, Simple examples of Mean, Median and Mode. Various measure of central tendency: Quartiles, deciles, percentiles. Their merits and demerits, Simple examples.

3. Measure of Dispersion:

Definition of dispersion, Measures of dispersion. Simple examples to find various measures of dispersion by different methods (Range, Q.D., M.D.,SD) for grouped and ungrouped data.

4. Skewness:

Meaning of Skewness, Test of skewness, Measure of Skewness, Karl pearsons and Bowleys method to measure the skewness.

Reference Books:

(1)S.C.Gupta & V.K.kapoor :Fundamental of applied statistics Sultan chand & sons New delhi.

(2) D.S.Sancheti & V.K.Kapoor: Statistics:Theory,Method&Application" Sultan chand & Sons,New delhi.

(3)D.N.Elhance:Fundamentals of statistics"

(4) Goon,Gupta,Dasgupta: An outline of statistical Theory"Vol1 and 2, Wordd
   press,Calcutta.

Activites:

(1)Project on measure of central tendency.

(2)Seminar on measure of dispression and skewness.

(3)Assignement on above Four units.

(4)Quiz on basic statistics.

(5)Group Discussion on above Four units.

1. Sampling Methods:
Concept of population survey and sample survey. Difference between population survey and sample survey.
Characteristics of a Good sample. Importance of size of a sample, Meaning of sampling (With replacement and without replacement), Method of sampling -Simple random sampling simple numerical examples upto 3 strata.

2. Index Number:
Definition, Limitations and uses of Index numbers. Construction of index number by aggregate expenditure method and family budget method using Laspeyre's, Paasche's and Fisher's Formula.

3. Time Series:
Meaning of Time series, various components of time series: Trend, Seasonal, Cyclic and Random components. Methods of measuring Trend by (a) Graphical method (b) Moving average method.Seasonal indices and simple examples to obtain seasonal indices.

4. Demography Methods:
Meaning and scope of demography, use of demographic statistics. Method of collecting demographic statistics. Death rates, Crude death rate (C.D.R.) and standardized Death Rate (S.D.R.) Examples to find C.D.R., S.D.R., and to compare the healthiness of cities. Meaning of Infant Mortality Rate (I.M.R.), Crude birth rate (C.B.R.), Meaning of fertility rate, General Fertility Rate (G.F.R.), Specific Fertility Rate (S.F.R.) and total fertility rate (T.F.R.), Simple examples.

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(3) D. N. Elhance: Fundamentals of statistics"

(4) Goon, Gupta, Dasgupta: An outline of statistical Theory"Vol1 and 2, Word press, Calcutta.

Activites:

(1)Project on demography.

(2)Presentation on Time series.

(3)Assignement on above Four units.

(4)Ict on bisag.

(5)Group Discussion on above Four units.