

To be effective from 2016-2017

**REVISED SYLLABUS B.A. SEMESTER-2
STATISTICS ELECTIVE— I PAPER 111 (PAPER 1)
MATHEMATICAL STATISTICS**

1. Permutation and Combination: (25%)

Basic idea of permutations and combinations with simple illustrations. Formula for ${}^n P_r$ and ${}^n C_r$ (Without proof) with examples.

2. Probability (25%)

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 (25%)

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 (25%)

Definition of raw 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).

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**REVISED SYLLABUS B.A. SEMESTER-2
STATISTICS ELECTIVE – I PAPER 112 (PAPER 2)
APPLIED STATISTICS**

1. Sampling Methods (25%)

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 (25%)

Definition of ANOVA, Uses of ANOVA, Only One -Way Classification.

3. Probability Distribution-1 (25%)

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

4. Probability Distribution-II (25%)

Normal distribution, Mean and variance, application, Properties of Normal distribution (Without proof) and Simple examples based on this 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.

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REVISED SYLLABUS B.A. SEMESTER-2

STATISTICS ELECTIVE – II PAPER 113 (PAPER 7)

FUNDAMENTAL OF STATISTICS

1 Sampling Methods: (25%)

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: (25%)

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: (25%)

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: (25%)

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.

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, Word press,
Calcutta.

Activites:

- (1) Project on demography.
- (2) Presentation on Time series.
- (3) Assignment on above four units.
- (4) Ict on bisag.
- (5) Group Discussion on above four units.