

## Reduced Syllabus :Half-Yearly Examination :Class XII : Statistics : 70 Marks

**1. Correlation & Regression :** Bivariate data, Scatter diagram. Correlation & Correlation coefficient. Properties of Correlation coefficient. Rank Correlation. Spearman's Rank Correlation Coefficient (without tie).

Concept of Regression, Principle of Least squares, Fitting of Regression lines. Important results relating to regression lines.

**2. Probability & Probability Distributions -I :** Random Experiment, Trial, Sample space, Sample point and different types of events. Definition of Probability : Classical, Statistical and Axiomatic, Theorem on the probability of union of (two & three) events. Conditional probability, Theorem on conditional probability for two & three events. Independence of events. Bayes theorem and its application.

**3. Random variable (discrete and continuous) and its probability distribution. Cumulative distribution function. Probability mass function and probability density function. Mathematical expectation.**

<b>Marks Distribution for Half-Yearly Examination</b>					
Topic	1 Mark	2 Mark	3 Marks	5 Marks	Total
Correlation & Regression	10	3	3	2	35
Probability and Probability Distributions-I	10	3	3	2	35
<b>Total</b>	<b>1x2</b>	<b>2x6</b>	<b>3x6</b>	<b>5x4</b>	<b>70 (36Q)</b>

## Practical Syllabus for Half-Yearly Examination : Class XII : Statistics

1. Scatter diagram
2. Correlation coefficient and Linear Regression
3. Spearman's Rank Correlation coefficient (without tie)

### Practical Examination : Marks Distribution : 30 Marks :

Topic	Marks
1. Experiments (5+10)	15
2. Practical Note Book	5
3. Viva Voce	5
4. Attendance	5

## Reduced Syllabus : Pre-Board/ Final Examination : Class XI : Statistics : 70 Marks

- 1. Mathematics :** Standard definition of Gamma integral and results involving it (without derivations)
- 2. Probability Distribution-II :** Uniform (Discrete and Continuous), Bernoulli, Binomial, Poisson and Normal distributions.
- 3. Sampling, Estimation & Testing of Hypotheses :** Population & sample. Parameter & statistic. Census & Sample survey. Concepts of probability sampling and random number tables. Concepts of sampling distribution of statistic and its standard error. Simple random sampling with replacement and Simple random sampling without replacement (SRSWR).

Concept of Point estimation. Requirement of good estimator : Unbiasedness, Consistency, Efficiency. Elementary concept of MVUE & BLUE.

Statistical tests of Hypothesis Null & alternative hypothesis. Simple & composite hypothesis, Critical region, Type-I and Type-II errors, Level of Significance and size of critical region, power of a test. Tests of significance related to a single Binomial proportion, two binomial proportions using large sample approximations. Exact tests of hypothesis under normal set-up for a single mean and equality of two means. Frequency Chi-square test & Goodness of fit.

*N.B :- Theory Syllabus of Pre-test examination is also included in Test Examination.*

<b>Marks Distribution for Pre-Board/ Final Examination</b>				
Topic	1 Mark	2 Marks	3 Marks	5 Marks
Mathematics				1
Correlation & Regression	8	2	1	1
Probability and Probability Distributions-I	4	1	2	1
Probability Distributions-II	5	2	1	1
Sampling, Estimation, Testing of Hypothesis	3		1	1
<b>Total</b>	<b>1x20</b>	<b>2x5</b>	<b>3x5</b>	<b>5x5</b>

## Practical Syllabus : Pre-Board/ Final Examination : Statistics

1. Application and Fitting of Binomial Distribution
2. Application and Fitting of Poisson Distribution
3. Application and Fitting of Normal Distribution
4. Large sample tests of a single mean, single proportion and difference to two proportions.
5. Person's Chi-square tests.
6. Exact tests of hypotheses under normal set-up for a single mean, difference to two means and single variance.