

CLASS - XII

SEMESTER – IV

SUBJECT : STATISTICS (STAT)

FULL MARKS: 35

CONTACT HOURS: 40 Hours

COURSE CODE : THEORY

UNIT No.	TOPICS	CONTACT HOURS	MARKS
UNIT 1	Descriptive Statistics: Bivariate Data, Scatter diagram, Two - way frequency distribution, Marginal and conditional distribution. Simple correlation and its properties. Simple regression Analysis and its related results Rank data and rank correlation.(Spearman's Rank Correlation coefficient –case of no tie)	09	10
UNIT 2	Some Continuous Distribution Rectangular distribution and Normal distribution. their properties with related problem Sums. Fitting of above distributions.	07	07
UNIT 3	Sampling theory and Sampling distribution Population and Sample, Parameter and Statistic, Complete Enumeration and sample surveys, Basic principles of sample survey, Advantages of Sample survey over complete enumeration. Concept of probability sampling, Practical methods of drawing a random sample using a random Number Table, SRSWR and SRSWOR, Concept of Sampling distribution of sample mean and its standard error.	06	05
UNIT 4	p.d.f and shape of χ^2 , t and F with expectation and variance (without derivation)	03	02
UNIT 5	Estimation Idea of inference, Point estimation, Interval estimation, Estimator and estimate. Four basic criteria of Estimator, Concept of bias. Idea of unbiasedness and minimum variance unbiasedness. Point estimation of Binomial proportion, Poisson mean, normal mean and variance (using method of moments).	05	03



UNIT 6	<p>Testing of Hypothesis:</p> <p>Statistical test of Hypothesis-Null and Alternative hypothesis, Simple and Composite Hypothesis, Type I and Type II error, Critical region, level of significance, Power of a test, One sided and Two sided tests. Critical Value.</p> <p>Tests of significance related to a single Binomial Proportion and Poisson Mean(using Large sample approximation), Mean and Variance of a single univariate Normal distribution.</p>	06	05
UNIT 7	<p>Statistical Quality Control</p> <p>Introduction, Idea of Quality and Quality Control, Advantages of Statistical Quality Control, Process and Lot control, Control chart technique. Construction of control charts by variables (\bar{X} R) and attributes(p, np)</p>	04	03
	TOTAL	40 Hours	35

[Note:20 Hours reserved for Remedial classes, Tutorials and Home Assignments.]