www.gcrjy.ac.in
GOVERNMENT COLLEGE (AUTONOMOUS), RAJAHMUNDRY
Estd: 1853; An Autonomous Institution & Accredited by NAAC at Grade 'A+'
East Godavari District -533 105, Andhra Pradesh, India
(Affiliated to Adikavi Nannayya University, Rajamahendravaram, A.P -533296)
Dr. Ramachandra R K, M.Sc., Ph.D.
PRINCIPAL
e-mail: gcrjy1853@gcrjy.ac.in

QUESTION BANK

2025-2026

DEPARTMENT OF STATISTICS

BOARD OF STUDIES (B.O.S)

SEMESTER -1,2,3,4,5,6

SEMESTER-I

MAJOR/MINOR	COURSE
I BSC STATISTICS (HONOURS)	
MAJOR - I	M1:Descriptive Statistics
MAJOR - II	M2:Random Variable and Mathematical Expectations

I BSC STATISTICS (HONOURS)

Course I: DESCRIPTIVE STATISTICS (MAJOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Illustrate function of statistics.	BT1	PO2	C01
2	Describe importance of statistics.	BT3	PO3	C01
3	Evaluate median of the following data C.I: 20-30 | 30-40 | 40-50 | 50-60 | 60-70 FRE: 3 | 5 | 20 | 10 | 5	BT2	P02	C02
4	Explain about limitation of statistics.	BT1	PO1	CO2
5	Determine about frequency distribution.	BT3	PO4	CO3
6	Explain about types of frequency distribution.	BT2	PO2	CO3
7	Analyze about nominal and ordinal measurement of scale.	BT2	PO3	CO3
8	Explain about properties of A.M	BT1	PO2	CO3
9	Explain about classification of data.	BT3	PO5	CO2
10	Describe about features of good average.	BT3	PO3	CO3
11	Explain about sheppards correction for moments.	BT2	PO1	C04
12	Explain about kurtosis and types.	BT2	PO2	C04
13	Describe about law moments in terms of central moments.	BT1	PO3	CO5
14	Show that Bowley's coefficient of skewness lies between ± 1	BT3	PO1	CO5
15	Show that Karl pearson coefficient of skewness lies between ± 3.	BT3	PO2	CO5

S.N	Long Questions	BT	PO'S	CO'S
1	Explain about scope of Statistics.	BT1	PO2	C01
2	Write about Primary and secondary data.	BT3	PO3	C01
3	Describe about Presentation of data..	BT2	P02	C02
4	Illustrate about graphical representation of data.	BT1	PO1	CO2
5	Explain about diagram representation of data.	BT3	PO4	CO3
6	Describe briefly about measures of central tendency.	BT2	PO2	CO3
7	Calculate mean to the following data Marks: 10-20 | 20-30 | 30-40 | 40-50 | 50-60 Frequency: 5 | 8 | 25 | 22 | 10	BT2	PO3	CO3
8	Explain in detailed about measures of dispersion	BT1	PO2	CO3
9	Calculate mean derivation about median to the following data C.I: 10-20 | 20-30 | 30-40 | 40-50 | 50-60 F: 5 | 10 | 15 | 10 | 5	BT3	PO4	CO3
10	Explain about skewness and measures of skewness.	BT4	PO5	CO4
11	Explain Standard Deviation its problem	BT3	PO3	CO3
12	Central and Non – Central moments	BT2	PO1	C04
13	Explain about sheppards correction for moments	BT2	PO2	C04
14	Frequency distribution and types of frequency distributions	BT1	PO3	CO5
15	Describe briefly about measures of central tendency.			

I BSC STATISTICS (HONOURS)

Course – 2 :RANDOM VARIABLES AND MATHEMATICAL EXPECTATIONS (MAJOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Explain about random variables and its types .	BT1	PO2	C01
2	Describe the important properties of a random variable.	BT3	PO3	C01
3	Demonstrate P.M.F and P.D.F.	BT2	P02	C02
4	Explain about bi variate discrete random variable.	BT1	PO1	CO2
5	Describe about continuous random variable	BT3	PO4	CO3
6	Write about PDF in bi variate random variable	BT2	PO2	CO3
7	Explain about MDF in bi variate random variable	BT2	PO3	CO3
8	State and prove additional theorem in expectation	BT1	PO2	CO3
9	State and prove multiplication theorem in expectation for two events	BT3	PO5	CO2
10	State and prove Cauchy-schwartz in equalities.	BT3	PO3	CO3
11	Explain about moment generating function and definition	BT2	PO1	C04
12	Define characteristic function and write its properties	BT2	PO2	C04
13	Describe about weak-law of large number	BT1	PO3	CO5
14	Explain Bi-variate Random Variables?	BT3	PO1	CO5
15	Write about statement of central limit theorem	BT3	PO2	CO5

S.N	Long Questions	BT	PO'S	CO'S
1	For a continuous random variable x $F(x)=k.x^2 e^{-x}$, $x \geq 0$ (i) K (ii) S.D (iii) Mean(iv) variance	BT1	PO2	C01
2	Define distribution function in uni variate random variable and explain properties	BT2	PO3	CO3
3	A random variable x has the following probability function x: -2, -1, 0, 1, 2, 3 P(x): 0.1, k, 0.2, 2k, 0.3, k Find (i) K,(ii) Mean and variance	BT1	PO2	CO3
4	The joint probability distribution of x and y is given below Find (i) Marginal distributions (ii) Conditional distribution of y given x=2 (iii) P(x+y<4) (iv)P(x>1), P(y<2) y/x: 1, 2, 3 1: 0.1, 0.1, 0.2 2: 0.2, 0.3, 0.1	BT3	PO3	C01
5	Describe about distribution function of bi variate random variables	BT2	P02	C02
6	Explain i)E(X+Y)= E(X)+E(Y) ii)E(XY)=E(X)E(Y)	BT1	PO1	CO2
7	State and prove additional theorem of expectation for n events	BT3	PO4	CO3
8	Define variance and explain its properties.	BT2	PO2	CO3
9	Explain MGF and its Properties	BT2	PO3	CO3
10	State and prove a multiplication theorem of expectation for n events	BT1	PO2	CO3
11	State and prove chebyshev in equality	BT3	PO4	CO3
12	Explain about moments generating function and its properties	BT2	PO5	CO4
13	Describe about moment cumulative generating and its properties	BT3	PO3	CO3
14	Define about moment probability generating and its properties	BT2	PO1	C04
15	Define (a)sample space (b) exhaustive events (c) exclusive events (d) favorable outcomes.	BT2	PO2	C04

SEMESTER-II

MAJOR/MINOR	COURSE
I BSC STATISTICS (HONOURS)	
MAJOR - III	M3 :THEORTICAL DISCRETE DISTRIBUTION
MAJOR - IV	M4 : THEORTICAL CONTINUOUS DISTRIBUTION

I BSC STATISTICS (HONOURS)

Course 3: Theoretical Discrete Distributions (MAJOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Define Bernoulli distribution?	BT1	PO2	C01
2	Explain about Binomial distribution?	BT3	PO3	C01
3	Define Poisson distribution?	BT3	PO1	CO5
4	Describe Mgf,Cf,Cgf&Pgf ofPoisson distribution?	BT3	PO2	CO5
5	Define Geometric distribution?	BT2	PO1	C04
6	Discuss Describe Mgf,Cf,Cgf&Pgf of Binomial Distribution?	BT1	PO1	CO2
7	Explain Assumptions of Poisson distribution?	BT1	PO2	C01
8	Explain Assumptions of Binomial distribution?	BT2	PO2	CO3
9	Describe Mgf,Cf,Cgf&Pgf ofGeometric distribution	BT2	PO2	C04
10	Explain Additive Property ofBinomial Distribution	BT2	PO3	CO3
11	Fit a Binomial Distribution for the following data	BT1	PO2	CO3
12	Explain Additive Property Of PoissonDistribution	BT3	PO5	CO2
13	Explain Poisson distribution as a limiting cases	BT3	PO3	CO3
14	Explain Additive Property of GeometricDistribution	BT2	PO1	C04
15	Explain about HyperGeometricDistribution	BT2	PO2	C04

S.n	Long Questions	BT	PO'S	CO'S
1	Define Moments of Binomial distribution?	BT1	PO2	C01
2	Explain Mean and Variance through MGF of Binomial distribution?	BT3	PO1	CO5
3	Define Moments of Poisson distribution?	BT3	PO3	C01
4	Describe Mean and Variance through MGF of distribution?	BT2	P02	C02
5	Define Moments of Geometric distribution?	BT1	PO3	CO5
6	Explain Mean and Variance through MGF of Geometricdistribution?	BT3	PO4	CO3
7	Fit a Poisson Distribution for the following data X: 0 1 2 3 4 5 6 7 F: 0 4 13 28 42 20 6 2	BT1	PO1	CO2
8	Fit a Geometric Distribution for the following data X: 1 2 3 4 5 6 F: 8 7 12 20 32 18	BT3	PO4	CO3
9	Define Limiting case of Binomial distribution to Normal distribution	BT2	PO2	CO3
10	Define Limiting case of Poisson distribution to Normal distribution	BT3	PO3	CO3
11	Binomial Distribution As a limiting case of hyper geometric distribution	BT2	PO1	C04
12	ExplainAssumptions and applications of Geometricdistribution	BT2	PO2	C04
13	Explain LimitingcaseofNegative Binomial Distribution toNormal distribution?	BT2	PO3	CO3
14	Explain Mgf,Cf,Cgf&Pgf ofGeometric distribution	BT1	PO2	CO3
15	Explain Lack of memory property of Geometric Distribution	BT3	PO5	CO2

I BSC STATISTICS (HONOURS)

Course 4: Theoretical continuous distribution. (MAJOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Define Discrete Uniform Distribution.	BT1	PO2	C01
2	Define Distribution Function of Uniform Distribution	BT3	PO3	C01
3	Define Applications of Uniform Distribution	BT3	PO1	CO5
4	DefineIt's Functions of Uniform Distribution Mgf,Cf&Cgf	BT3	PO2	CO5
5	DefineApplications of Exponential Distribution	BT2	PO1	C04
6	DefineIt's Functions of Exponential Distribution Mgf,Cf&Cgf	BT1	PO1	CO2
7	Describe Distribution Function of Exponential Distribution.	BT1	PO2	C01
8	ExplainApplications of Gamma Distribution	BT2	PO2	CO3
9	Explain Functions of Gamma Distribution Mgf,Cf&Cgf	BT2	PO2	C04
10	Explain Application Of Gamma Distribution	BT2	PO3	CO3
11	Explain Assumptions of Beta Distribution	BT1	PO2	CO3
12	Moments of Gamma Distribution	BT3	PO5	CO2
13	Importance of Normal Distribution	BT3	PO3	CO3
14	Define Standard Normal distribution.	BT2	PO1	C04
15	Write about the applications of Student T-distribution	BT1	PO3	CO5

S.no	Long Questions	BT	PO'S	CO'S
1	Explain the Mean deviation about mean in Uniform distribution	BT1	PO2	C01
2	Define Uniform distribution and derive it's mean and variance.	BT3	PO1	CO5
3	Define Exponential distribution and derive it's mean and variance.	BT3	PO3	C01
4	State and prove Memory less property of Exponential distribution.	BT2	P02	C02
5	Define Gamma distribution and derive it's mean and variance through M.G.F.	BT1	PO3	CO5
6	Write about Limiting form of Gamma distribution.	BT3	PO4	CO3
7	Discuss briefly about Beta distribution of first kind and derive it's mean and variance.	BT1	PO1	CO2
8	Describe briefly about the Beta distribution of second kind and derive it's mean and variance.	BT3	PO4	CO3
9	Define Normal distribution and derive it's mean and variance.	BT2	PO2	CO3
10	Explain about Importance of Normal distribution.	BT3	PO3	CO3
11	Explain Moments of Beta Distribution of first kind	BT2	PO1	C04
12	ExplainApplication and properties of chi Square distribution	BT2	PO2	C04
13	Describe about Student T-distribution and their properties.	BT2	PO3	CO3
14	Explain about the F-distribution and their properties.	BT1	PO2	CO3
15	Define chi-square distribution and explain it's properties.	BT3	PO5	CO2

SEMESTER-III

MAJOR/MINOR	COURSE
II BSC STATISTICS (HONOURS)	
MAJOR – 3	M3 :THEORTICAL DISCRETE DISTRIBUTION
MAJOR – 4	M4 : THEORTICAL CONTINUOUS DISTRIBUTION
MAJOR – 5	M5: STATISTICAL METHODS
MAJOR – 6	M6: STATISTICAL INFERENCE
II BSC COMPUTATIONAL MATHEMATICS (HONOURS)	
MINOR – 2	STATISTICAL METHODS

II BSC STATISTICS (HONOURS)

Course 3: Theoretical Discrete Distributions (MAJOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Define Bernoulli distribution?	BT1	PO2	C01
2	Explain about Binomial distribution?	BT3	PO3	C01
3	Define Poisson distribution?	BT3	PO1	CO5
4	Describe Mgf,Cf,Cgf&Pgf ofPoisson distribution?	BT3	PO2	CO5
5	Define Geometric distribution?	BT2	PO1	C04
6	Discuss Describe Mgf,Cf,Cgf&Pgf of Binomial Distribution?	BT1	PO1	CO2
7	Explain Assumptions of Poisson distribution?	BT1	PO2	C01
8	Explain Assumptions of Binomial distribution?	BT2	PO2	CO3
9	Describe Mgf,Cf,Cgf&Pgf ofGeometric distribution	BT2	PO2	C04
10	Explain Additive Property ofBinomial Distribution	BT2	PO3	CO3
11	Fit a Binomial Distribution for the following data	BT1	PO2	CO3
12	Explain Additive Property Of PoissonDistribution	BT3	PO5	CO2
13	Explain Poisson distribution as a limiting cases	BT3	PO3	CO3
14	Explain Additive Property of GeometricDistribution	BT2	PO1	C04
15	Explain about HyperGeometricDistribution	BT2	PO2	C04

S.n	Long Questions	BT	PO'S	CO'S
1	Define Moments of Binomialdistribution?	BT1	PO2	C01
2	Explain Mean and Variance through MGF of Binomial distribution?	BT3	PO1	CO5
3	Define Moments of Poisson distribution?	BT3	PO3	C01
4	Describe Mean and Variance through MGF of distribution?	BT2	P02	C02
5	Define Moments of Geometric distribution?	BT1	PO3	CO5
6	Explain Mean and Variance through MGF of Geometricdistribution?	BT3	PO4	CO3
7	Fit a Poisson Distribution for the following data X: 0 1 2 3 4 5 6 7 F: 0 4 13 28 42 20 6 2	BT1	PO1	CO2
8	Fit a Geometric Distribution for the following data X: 1 2 3 4 5 6 F: 8 7 12 20 32 18	BT3	PO4	CO3
9	Define Limiting case of Binomial distribution to Normal distribution	BT2	PO2	CO3
10	Define Limiting case of Poisson distribution to Normal distribution	BT3	PO3	CO3
11	Binomial Distribution As a limiting case of hyper geometric distribution	BT2	PO1	C04
12	ExplainAssumptions and applications of Geometricdistribution	BT2	PO2	C04
13	Explain LimitingcaseofNegative Binomial Distribution toNormal distribution?	BT2	PO3	CO3
14	Explain Mgf,Cf,Cgf&Pgf ofGeometric distribution	BT1	PO2	CO3
15	Explain Lack of memory property of Geometric Distribution	BT3	PO5	CO2

II BSC STATISTICS (HONOURS)

Course 4: Theoretical continuous distribution (MAJOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Define Discrete Uniform Distribution.	BT1	PO2	C01
2	Define Distribution Function of Uniform Distribution	BT3	PO3	C01
3	Define Applications of Uniform Distribution	BT3	PO1	CO5
4	DefineIt's Functions of Uniform Distribution Mgf,Cf&Cgf	BT3	PO2	CO5
5	DefineApplications of Exponential Distribution	BT2	PO1	C04
6	DefineIt's Functions of Exponential Distribution Mgf,Cf&Cgf	BT1	PO1	CO2
7	Describe Distribution Function of Exponential Distribution.	BT1	PO2	C01
8	ExplainApplications of Gamma Distribution	BT2	PO2	CO3
9	Explain Functions of Gamma Distribution Mgf,Cf&Cgf	BT2	PO2	C04
10	Explain Application Of Gamma Distribution	BT2	PO3	CO3
11	Explain Assumptions of Beta Distribution	BT1	PO2	CO3
12	Moments of Gamma Distribution	BT3	PO5	CO2
13	Importance of Normal Distribution	BT3	PO3	CO3
14	Define Standard Normal distribution.	BT2	PO1	C04
15	Write about the applications of Student T-distribution	BT1	PO3	CO5

S.no	Long Questions	BT	PO'S	CO'S
1	Explain the Mean deviation about mean in Uniform distribution	BT1	PO2	C01
2	Define Uniform distribution and derive it's mean and variance.	BT3	PO1	CO5
3	Define Exponential distribution and derive it's mean and variance.	BT3	PO3	C01
4	State and prove Memory less property of Exponential distribution.	BT2	P02	C02
5	Define Gamma distribution and derive it's mean and variance through M.G.F.	BT1	PO3	CO5
6	Write about Limiting form of Gamma distribution.	BT3	PO4	CO3
7	Discuss briefly about Beta distribution of first kind and derive it's mean and variance.	BT1	PO1	CO2
8	Describe briefly about the Beta distribution of second kind and derive it's mean and variance.	BT3	PO4	CO3
9	Define Normal distribution and derive it's mean and variance.	BT2	PO2	CO3
10	Explain about Importance of Normal distribution.	BT3	PO3	CO3
11	Explain Moments of Beta Distribution of first kind	BT2	PO1	C04
12	ExplainApplication and properties of chi Square distribution	BT2	PO2	C04
13	Describe about Student T-distribution and their properties.	BT2	PO3	CO3
14	Explain about the F-distribution and their properties.	BT1	PO2	CO3
15	Define chi-square distribution and explain it's properties.	BT3	PO5	CO2

II BSC STATISTICS (HONOURS)

Statistics Course - 5: STATISTICAL METHODS (MAJOR PAPER)

Question Bank

S.NO	Short Questions	BT	PO'S	CO'S
1	Define Curve Fitting.	BT1	PO2	C01
2	Define Power Curve.	BT2	PO1	C04
3	Explain about principal of Least Squares.	BT3	PO3	C01
4	Define Correlation and types of correlation.	BT2	P02	C02
5	Explain about Karl Pearson's Coefficient of Correlation.	BT1	PO1	CO2
6	Define Rank Correlation.	BT3	PO4	CO3
7	Elaborate Scatter diagram.	BT2	PO1	C04
8	Explain about Bi-variate frequency distribution.	BT2	PO2	CO3
9	Define Correlation Ratio.	BT2	PO3	CO3
10	Define Regression.	BT1	PO3	CO5
11	Write about types of Regression.	BT1	PO2	CO3
12	Explain about Regression lines.	BT3	PO5	CO2
13	Define Attributes.	BT3	PO3	CO3
14	Explain about Order of class frequencies.	BT2	PO1	C04
15	Describe about Consistency of data.	BT2	PO2	C04

S.NO	Long Questions	BT	PO'S	CO'S
1	Explain about Fitting of second-degree parabola.	BT3	PO3	C01
2	Explain about Fitting of Power curve.	BT2	P02	C02
3	Explain about Fitting of straight line.	BT1	PO1	CO2
4	Define Correlation and explain it's properties.	BT1	PO2	C01
5	Explain about measures of correlation.	BT2	P02	C02
6	Derive Spearman's Rank correlation coefficient.	BT3	PO4	CO3
7	Explain about Multiple and Partial correlation coefficient.	BT3	PO3	CO3
8	Describe Define Association of attributes	BT1	PO2	CO3
9	Explain about Regression and explain it's properties.	BT2	PO2	CO3
10	Distinguish between Correlation vs Regression.	BT3	PO4	CO3
11	Analyze briefly about explained and unexplained variations in Regression.	BT2	PO3	CO3
12	Prove that angle between two lines of regression.	BT1	PO3	CO5
13	Describe about the relationship between Association and Colligation of Attributes.	BT3	PO5	CO2
14	Explain briefly about contingency table: Square, Mean square contingency.	BT2	PO1	C04
15	Show that for n attributes $A_1<A_2<\ldots\ldots\ldots<A_n$.	BT1	PO3	CO5

II BSC STATISTICS (HONOURS)

Course 6: Inferential Statistics (MAJOR PAPER)

Question Bank

S.NO	Short Questions	BT	PO'S	CO'S
1	Explain about the consistency and efficiency.	BT1	PO2	C01
2	Describe about confidence intervals.	BT3	PO3	C01
3	Define Null and Alternative hypothesis.	BT3	PO3	CO3
4	Explain about level of significance.	BT2	P02	C02
5	Write about two types of errors.	BT1	PO3	CO5
6	Explain about Statistical hypothesis.	BT1	PO1	CO2
7	Explain about large sample test for Single mean	BT3	PO4	CO3
8	Explain about large sample test for Single Proportion.	BT3	PO5	CO2
9	Explain about large sample test for correlation coefficients.	BT3	PO3	CO3
10	Describe about chi-square - test for single variance.	BT2	PO1	C04
11	Define Small sample test and write it's assumptions.	BT2	PO2	C04
12	Explain about t-test for Single mean	BT1	PO2	CO3
13	Describe about paired t-test.	BT3	PO4	CO3
14	Write about Advantages and Disadvantages of Non-parametric tests	BT2	PO2	CO3
15	Describe about the Wald Wolfowitz's runs test.	BT2	PO3	CO3

Sno	Long Questions	BT	PO'S	CO'S
1	Describe about the criteria of a good estimator.	BT1	PO2	C01
2	Define MLE's and explain about properties of MLE's.	BT3	PO3	C01
3	ExplainTwo tailed test and one tailed test	BT1	PO3	CO5
4	Explain about Normal population parameters by MLE Method.	BT3	PO1	CO5
5	State and prove Neyman's Pearson's Lemma.	BT3	PO2	CO5
6	Define (i) Critical Region(ii) most powerful test (iii) power of a test.	BT1	PO2	CO3
7	Explain about test for differences of two means.	BT1	PO1	CO2
8	Explain about test for differences of Proportions.	BT3	PO4	CO3
9	Explain about large sample test for standard deviation.	BT1	PO1	CO2
10	Illustrate about chi-square test for goodness of fit.	BT2	PO2	CO3
11	Discuss about Independence of attributes in chi-square distribution.	BT2	PO3	CO3
12	Describe about F-test for equality of variances.	BT1	PO2	CO3
13	Explain Median test.	BT3	PO4	CO3
14	Explain Sign test.			
15	Distinguish between the parametric tests vs non-parametric tests?	BT4	PO5	CO4

II BSC COMPUTATIONAL MATHEMATICS (HONOURS)

STATISTICAL METHODS (MINOR PAPER)
Question Bank

S.NO	Short Questions	BT	PO'S	CO'S
1	Define Curve Fitting.	BT1	PO2	C01
2	Define Power Curve.	BT2	PO1	C04
3	Explain about principal of Least Squares.	BT3	PO3	C01
4	Define Correlation and types of correlation.	BT2	P02	C02
5	Explain about Karl Pearson's Coefficient of Correlation.	BT1	PO1	CO2
6	Define Rank Correlation.	BT3	PO4	CO3
7	Elaborate Scatter diagram.	BT2	PO1	C04
8	Explain about Bi-variate frequency distribution.	BT2	PO2	CO3
9	Define Correlation Ratio.	BT2	PO3	CO3
10	Define Regression.	BT1	PO3	CO5
11	Write about types of Regression.	BT1	PO2	CO3
12	Explain about Regression lines.	BT3	PO5	CO2
13	Define Attributes.	BT3	PO3	CO3
14	Explain about Order of class frequencies.	BT2	PO1	C04
15	Describe about Consistency of data.	BT2	PO2	C04

S.NO	Long Questions	BT	PO'S	CO'S
1	Explain about Fitting of second-degree parabola.	BT3	PO3	C01
2	Explain about Fitting of Power curve.	BT2	P02	C02
3	Explain about Fitting of straight line.	BT1	PO1	CO2
4	Define Correlation and explain it's properties.	BT1	PO2	C01
5	Explain about measures of correlation.	BT2	P02	C02
6	Derive Spearman's Rank correlation coefficient.	BT3	PO4	CO3
7	Explain about Multiple and Partial correlation coefficient.	BT3	PO3	CO3
8	Describe Define Association of attributes	BT1	PO2	CO3
9	Explain about Regression and explain it's properties.	BT2	PO2	CO3
10	Distinguish between Correlation vs Regression.	BT3	PO4	CO3
11	Analyze briefly about explained and unexplained variations in Regression.	BT2	PO3	CO3
12	Prove that angle between two lines of regression.	BT1	PO3	CO5
13	Describe about the relationship between Association and Colligation of Attributes.	BT3	PO5	CO2
14	Explain briefly about contingency table: Square, Mean square contingency.	BT2	PO1	C04
15	Show that for n attributes $A_1<A_2<\ldots\ldots\ldots<A_n$.	BT1	PO3	CO5

SEMESTER-IV

MAJOR/MINOR	COURSE
II BSC STATISTICS (HONOURS)	
MAJOR – 7	M7: THEORY OF SAMPLING
MAJOR – 8	M8: DESIGN OF EXPERIMENTS
MAJOR – 9	M9: NUMERICAL ANALYSIS
II BSC COMPUTATIONAL MATHEMATICS (HONOURS)	
MINOR – 3	THEORY OF SAMPLING
MINOR – 4	DESIGN OF EXPERIMENTS

II BSC STATISTICS (HONOURS)

Statistics Course–7: THEORY OF SAMPLING (MAJOR PAPER)

Question Bank

S.NO	Short Questions	BT	PO'S	CO'S
1	Write the difference between sampling versus census.	BT1	PO2	C01
2	Explain about limitations of sampling.	BT1	PO2	CO3
3	Define (i)parameter (ii) statistic (iii) Sampling distribution.	BT3	PO5	CO2
4	Define simple random sampling	BT3	PO3	CO3
5	Illustrate the types of SRS.	BT2	PO1	C04
6	Explain about Random number method.	BT2	PO2	C04
7	Explain about Lottery method.	BT1	PO3	CO5
8	Describe about Determination of sample size.	BT3	PO1	CO5
9	Write about advantages and disadvantages of stratified random sampling.	BT1	PO2	CO3
10	Explain stratified random sampling.	BT3	PO5	CO2
11	Define Proportional and Optimum allocation.	BT3	PO3	CO3
12	Write about Merits and Demerits of systematic sampling.	BT2	PO1	C04
13	Explain about Systematic Sampling.	BT2	PO2	C04
14	Explain the concept of Cluster sampling	BT1	PO3	CO5
15	Define NSSO and CSO.	BT3	PO1	CO5

S.NO	Long Questions	BT	PO'S	CO'S
1	Explain principal steps in sample survey.	BT2	PO2	CO3
2	Explain about types of sampling.	BT2	PO3	CO3
3	Describe about sampling and non sampling errors.	BT1	PO2	CO3
4	Distinguish between SRSWR and SRSWOR.	BT3	PO4	CO3
5	Show that $E(s^2)=S^2$ in SRSWOR.	BT4	PO5	CO4
6	Show that sample mean is unbiased estimator of population mean in SRSWOR.	BT3	PO3	CO3
7	Explain stratified random sampling with proportional and optimum allocation.	BT2	PO2	CO3
8	Show that sample mean is unbiased estimator of population mean in Stratified random sampling.	BT2	PO3	CO3
9	Define stratified random sampling and write about mean and variance.	BT1	PO2	CO3
10	Show that $V(\bar{y}_{opt})<=V(\bar{y}_{prop})<=V(\bar{y}_{srswor})$	BT3	PO4	CO3
11	Define Systematic sampling and write it's advantages and disadvantages.	BT4	PO5	CO4
12	Explain the comparison of systematic sampling with Stratified and SRSWOR.	BT3	PO3	CO3
13	Describe the concept of when N=nk in systematic sampling.	BT2	PO1	C04
14	Explain the functions of N.S.C	BT2	PO2	C04
15	Explain the roles and responsibilities of N.S.O	BT1	PO2	C01

II BSC STATISTICS (HONOURS)

Course – 8: DESIGN AND ANALYSIS OF EXPERIMENTS (MAJOR PAPER)

Question Bank

S.NO	Short Questions	BT	PO'S	CO'S
1	Write about assumptions of ANOVA.	BT1	PO2	C01
2	Write Short note on ANOVA	BT1	PO2	CO3
3	Define completely randomized design (CRD)	BT3	PO5	CO2
4	Explain about fixed effect & random effect model.	BT3	PO3	CO3
5	Describe about applications for RBD.	BT2	PO1	C04
6	Write about advantages and disadvantages of LSD.	BT2	PO2	C04
7	Describe Yates procedure to find factorial effect totals.	BT1	PO3	CO5
8	Compare the Efficiencies of RBD over LSD	BT3	PO1	CO5
9	Main effectsand interactioneffects	BT1	PO2	CO3
10	Two way classification	BT3	PO5	CO2
11	Estimation of one missing value in LSD	BT3	PO3	CO3
12	Explain 2^3factorialexperiments	BT2	PO1	C04
13	Explain 2^2factorialexperiments	BT2	PO2	C04
14	Fertilizers have been applied to Five plots each.	BT1	PO3	CO5
15	Layout of LSD	BT3	PO1	CO5

S.NO	Long Questions	BT	PO'S	CO'S
1	Explain ANOVAonewayclassification	BT2	PO2	CO3
2	One way Classification Model Problem	BT2	PO3	CO3
3	Four Varieties of Fertilizers have been applied to Five plots each. the yield given below	BT1	PO2	CO3
4	Explain about CRD	BT3	PO4	CO3
5	Explain missing plot technique is RBD	BT4	PO5	CO4
6	Explain about LSD	BT3	PO3	CO3
7	Explain 2^nfactorialexperiments	BT2	PO2	CO3
8	Explain ANOVAtwowayclassification	BT2	PO3	CO3
9	Explain missing plot technique is RBD	BT1	PO2	CO3
10	Four Varieties of Fertilizers have been applied to Five plots each. the yield given below	BT3	PO4	CO3
11	Efficiency of RBD relative to CRD	BT4	PO5	CO4
12	Write Short note on ANOVA	BT3	PO3	CO3
13	Define completely randomized design (CRD)	BT2	PO1	C04
14	Explain about fixed effect & random effect model.	BT2	PO2	C04
15	Describe about applications for RBD.	BT1	PO2	C01

II BSC COMPUTATIONAL MATHEMATICS (HONOURS)

Statistics Course–7: THEORY OF SAMPLING (MINOR PAPER)

Question Bank

S.NO	Short Questions	BT	PO'S	CO'S
1	Write the difference between sampling versus census.	BT1	PO2	C01
2	Explain about limitations of sampling.	BT1	PO2	CO3
3	Define (i)parameter (ii) statistic (iii) Sampling distribution.	BT3	PO5	CO2
4	Define simple random sampling	BT3	PO3	CO3
5	Illustrate the types of SRS.	BT2	PO1	C04
6	Explain about Random number method.	BT2	PO2	C04
7	Explain about Lottery method.	BT1	PO3	CO5
8	Describe about Determination of sample size.	BT3	PO1	CO5
9	Write about advantages and disadvantages of stratified random sampling.	BT1	PO2	CO3
10	Explain stratified random sampling.	BT3	PO5	CO2
11	Define Proportional and Optimum allocation.	BT3	PO3	CO3
12	Write about Merits and Demerits of systematic sampling.	BT2	PO1	C04
13	Explain about Systematic Sampling.	BT2	PO2	C04
14	Explain the concept of Cluster sampling	BT1	PO3	CO5
15	Define NSSO and CSO.	BT3	PO1	CO5

S.NO	Long Questions	BT	PO'S	CO'S
1	Explain principal steps in sample survey.	BT2	PO2	CO3
2	Explain about types of sampling.	BT2	PO3	CO3
3	Describe about sampling and non sampling errors.	BT1	PO2	CO3
4	Distinguish between SRSWR and SRSWOR.	BT3	PO4	CO3
5	Show that $E(s^2)=S^2$ in SRSWOR.	BT4	PO5	CO4
6	Show that sample mean is unbiased estimator of population mean in SRSWOR.	BT3	PO3	CO3
7	Explain stratified random sampling with proportional and optimum allocation.	BT2	PO2	CO3
8	Show that sample mean is unbiased estimator of population mean in Stratified random sampling.	BT2	PO3	CO3
9	Define stratified random sampling and write about mean and variance.	BT1	PO2	CO3
10	Show that $V(\bar{y}_{opt})<=V(\bar{y}_{prop})<=V(\bar{y}_{srswor})$	BT3	PO4	CO3
11	Define Systematic sampling and write it's advantages and disadvantages.	BT4	PO5	CO4
12	Explain the comparison of systematic sampling with Stratified and SRSWOR.	BT3	PO3	CO3
13	Describe the concept of when N=nk in systematic sampling.	BT2	PO1	C04
14	Explain the functions of N.S.C	BT2	PO2	C04
15	Explain the roles and responsibilities of N.S.O	BT1	PO2	C01

II BSC COMPUTATIONAL MATHEMATICS (HONOURS)

Course – 8: DESIGN AND ANALYSIS OF EXPERIMENTS (MINOR PAPER)

Question Bank

S.NO	Short Questions	BT	PO'S	CO'S
1	Write about assumptions of ANOVA.	BT1	PO2	C01
2	Write Short note on ANOVA	BT1	PO2	CO3
3	Define completely randomized design (CRD)	BT3	PO5	CO2
4	Explain about fixed effect & random effect model.	BT3	PO3	CO3
5	Describe about applications for RBD.	BT2	PO1	C04
6	Write about advantages and disadvantages of LSD.	BT2	PO2	C04
7	Describe Yates procedure to find factorial effect totals.	BT1	PO3	CO5
8	Compare the Efficiencies of RBD over LSD	BT3	PO1	CO5
9	Main effectsand interactioneffects	BT1	PO2	CO3
10	Two way classification	BT3	PO5	CO2
11	Estimation of one missing value in LSD	BT3	PO3	CO3
12	Explain 2^3factorialexperiments	BT2	PO1	C04
13	Explain 2^2factorialexperiments	BT2	PO2	C04
14	Fertilizers have been applied to Five plots each.	BT1	PO3	CO5
15	Layout of LSD	BT3	PO1	CO5

S.NO	Long Questions	BT	PO'S	CO'S
1	Explain ANOVAonewayclassification	BT2	PO2	CO3
2	One way Classification Model Problem	BT2	PO3	CO3
3	Four Varieties of Fertilizers have been applied to Five plots each. the yield given below	BT1	PO2	CO3
4	Explain about CRD	BT3	PO4	CO3
5	Explain missing plot technique is RBD	BT4	PO5	CO4
6	Explain about LSD	BT3	PO3	CO3
7	Explain 2^nfactorialexperiments	BT2	PO2	CO3
8	Explain ANOVAtwowayclassification	BT2	PO3	CO3
9	Explain missing plot technique is RBD	BT1	PO2	CO3
10	Four Varieties of Fertilizers have been applied to Five plots each. the yield given below	BT3	PO4	CO3
11	Efficiency of RBD relative to CRD	BT4	PO5	CO4
12	Write Short note on ANOVA	BT3	PO3	CO3
13	Define completely randomized design (CRD)	BT2	PO1	C04
14	Explain about fixed effect & random effect model.	BT2	PO2	C04
15	Describe about applications for RBD.	BT1	PO2	C01

SEMESTER-V

(LONG TEAM INTERNSHIP)

SEMESTER-VI

MAJOR/MINOR	COURSE
III BSC STATISTICS (HONOURS)	
MAJOR – 10	M10: APPLIED STATISTICS
MAJOR – 11	M11: COMPUTATIONAL TECHNIQUES AND R PROGRAMMING
MAJOR – 12	M12: OPERATION RESEARCH
MAJOR – 13	M13: OPTIMIZATION TECHNIQUES
III BSC COMPUTATIONAL MATHEMATICS (HONOURS)	
MINOR – 5	APPLIED STATISTICS
MINOR – 6	COMPUTATIONAL TECHNIQUES AND R PROGRAMMING

III BSC STATISTICS (HONOURS)

Course 10: APPLIED STATISTICS (MAJOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Explain time series	BT1	PO2	C01
2	Explain about trend and its measures	BT3	PO3	C01
3	Explain seasonal variations	BT2	P02	C02
4	Explain cyclical variations	BT1	PO1	CO2
5	Explain irregular variations	BT3	PO4	CO3
6	Explain time reversal test	BT2	PO2	CO3
7	Explain factor reversal test	BT2	PO3	CO3
8	Explain about base shifting	BT1	PO2	CO3
9	Explain about splicing	BT3	PO5	CO2
10	What are the sources of vital statistics?	BT3	PO3	CO3
11	Explain various crude and standardized death rates.	BT2	PO1	C04
12	Define complete expectation of life and curate expectation of life.	BT2	PO2	C04
13	Explain about abridged life tables.	BT1	PO3	CO5
14	What are the problems faced in estimating national income	BT3	PO1	CO5
15	Link relative method.			

S.N	Long Questions	BT	PO'S	CO'S
1	Explain the components of time series.	BT1	PO2	C01
2	Explain the estimating trend (straight line) in a time series in detail. What are its merits and demerits?	BT3	PO3	C01
3	Explain ratio to moving averages method to determine seasonal variations in a time series data. What are its merits and demerits?	BT2	P02	C02
4	Explain the various problems involved in the construction of index numbers.	BT1	PO1	CO2
5	Explain the criteria of a good index number	BT3	PO4	CO3
6	What are Cost of living index numbers? How do you construct it?	BT2	PO2	CO3
7	Distinguish between chain based and fixed base index numbers.	BT2	PO3	CO3
8	Explain about base shifting, Splicing and deflation of index numbers.	BT1	PO2	CO3
9	Explain about the functions and organization of CSO	BT3	PO4	CO3
10	Explain the National income and its computation	BT4	PO5	CO4
11	Explain about the functions and organization of NSSO	BT3	PO3	CO3
12	Explain various rates of measuring mortality. Discuss its merits and demerits.	BT2	PO1	C04
13	Explain various measures of fertility. Discuss its merits and demerits of these measures.	BT2	PO2	C04
14	Explain in detail the construction and uses of life tables.	BT1	PO3	CO5
15	Explain GRR and NRR in measuring population growth.			

III BSC STATISTICS (HONOURS)

Course 11:COMPUTATIONAL STATISTICS AND R PROGRAMMING (MAJOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Define computer. What is the difference between System and Application software?	BT1	PO2	C01
2	What are the different types of computer Storages.	BT3	PO3	C01
3	Explain about creating charts in MS – Excel.	BT2	P02	C02
4	Describe the process of creating, saving and editing a workbook in MS Excel.	BT1	PO1	CO2
5	Describe the calculation various measures of central tendency and variability in R.	BT3	PO4	CO3
6	Discuss various types of visualizations in R	BT2	PO2	CO3
7	What are the input and output function available in R Programming?	BT2	PO3	CO3
8	Explain how do you represent data in R.	BT1	PO2	CO3
9	Explain the steps for fitting of straight line in Excel	BT3	PO5	CO2
10	What is p-value? How can you use it in interpretation.	BT3	PO3	CO3
11	Explain Arithmetic & logical operators in R.	BT2	PO1	C04
12	Write about basic functions in R	BT2	PO2	C04
13	Illustrate briefly sort and filter options in Excel.	BT1	PO3	CO5
14	Explain matrix operation using Excel functions.	BT3	PO1	CO5
15	How can you export Excel output to MS-Word.	BT3	PO2	CO5

S.N	Long Questions	BT	PO'S	CO'S
1	Describe basic applications of computer.	BT1	PO2	C01
2	Explain the types of software with examples.	BT3	PO3	C01
3	Explain Block diagram of computer and its components.	BT2	P02	C02
4	Discuss various programming languages their applications	BT1	PO1	CO2
5	Discuss data entry and editing features in Excel.	BT3	PO4	CO3
6	Explain Copy, Paste and Special paste options in Excel.	BT2	PO2	CO3
7	Explain how to create bar, line, and pie charts in Excel	BT2	PO3	CO3
8	Explain the steps for fitting of polynomial and power curves using Excel.	BT1	PO2	CO3
9	Discuss about data analysis Pak and its features.	BT3	PO4	CO3
10	Explain the steps to perform student's t-test using data analysis Pak.	BT4	PO5	CO4
11	Explain the steps to perform ANOVA using data analysis Pak	BT3	PO3	CO3
12	Explain the data types in R – programming.	BT2	PO1	C04
13	Explain Recycling, Filtering&Subsettingrelated to vectors in R.	BT2	PO2	C04
14	Describe vector creation and various operations on vectors in R with examples.	BT1	PO3	CO5
15	Explain the creation of matrix and various operations on matrices in R			

III BSC STATISTICS (HONOURS)

Course 12: OPERATIONS RESEARCH (MAJOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Matrix form of linear programming problem	BT1	PO2	C01
2	Graphical solution of LPP	BT3	PO3	C01
3	Applications of O.R	BT2	P02	C02
4	Significant features of O.R	BT1	PO1	CO2
5	Slack and surplus variables	BT3	PO4	CO3
6	Mathematical formulation of LPP.	BT2	PO2	CO3
7	Define general linear programming problem	BT2	PO3	CO3
8	Show that dual of the dual is primal	BT1	PO2	CO3
9	Define basic feasible solution	BT3	PO5	CO2
10	Define an artificial variable	BT3	PO3	CO3
11	What is duality in LPP	BT2	PO1	C04
12	State fundamental theorem of duality	BT2	PO2	C04
13	Define an unbounded solution	BT1	PO3	CO5
14	Define an infeasible solution	BT3	PO1	CO5
15	Define feasible solution	BT3	PO2	CO5

S.N	Long Questions	BT	PO'S	CO'S
1	Define operations research. Explain meaning and scope of O.R	BT1	PO2	C01
2	Explain various phases of operations research	BT3	PO3	C01
3	Explain graphical solutions for solving a linear programming problem	BT2	P02	C02
4	Explain simplex method to solve an LPP simplex algorithm	BT1	PO1	CO2
5	Explain the procedure for big 'M' to solve a LPP algorithm	BT3	PO4	CO3
6	Explain the procedure for two phases to solve a LPP	BT2	PO2	CO3
7	Solve the following LPP using simplex method (i) maximize Problems	BT2	PO3	CO3
8	Solve due following LPP using Big 'M' method Problems	BT1	PO2	CO3
9	Solve the following LPP using two phase method	BT3	PO4	CO3
10	Duality in linear programming problem and formulation of dual LPP	BT4	PO5	CO4
11	Dual simplex method	BT3	PO3	CO3
12	Solve the following LPP using duality	BT2	PO1	C04
13	Explain Concept of Two –Phase Method	BT3	PO3	CO3
14	Definition of Primal and Dual Problems	BT3	PO3	CO3
15	Relation between the solution of Primal and Dual problem	BT2	PO1	C04

III BSC STATISTICS (HONOURS)

Course 13: OPTIMIZATION TECHNIQUES (MAJOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Explain the formulation of LPP	BT1	PO2	C01
2	Explain general LPP	BT3	PO3	C01
3	Explain the standard form of LPP	BT2	P02	C02
4	Define feasible solution of a Transportation problem	BT1	PO1	CO2
5	Define basic feasible solution in a Transportation problem	BT3	PO4	CO3
6	Define optimum solution of a transportation problem	BT2	PO2	CO3
7	Explain loop in a transportation table with properties	BT2	PO3	CO3
8	Define Degeneracy in a transportation problem	BT1	PO2	CO3
9	Explain the formulation of Assignment problem	BT3	PO5	CO2
10	Maximization method	BT3	PO3	CO3
11	Explain Errors in networking	BT2	PO1	C04
12	Explain the sequencing problem	BT2	PO2	C04
13	Unbalanced Assignment problem	BT1	PO3	CO5
14	Write basic steps in PERT technique	BT3	PO1	CO5
15	Write rules for drawing net work diagram.	BT3	PO2	CO5

S.N	Long Questions	BT	PO'S	CO'S
1	problem – North – West corner rule	BT1	PO2	C01
2	Solve the following LPP by using graphical method (problems)	BT3	PO3	C01
3	North-west corner rule	BT2	P02	C02
4	Least cost entry methods	BT1	PO1	CO2
5	VAM method for a given transportation	BT3	PO4	CO3
6	Explain Hungarian method in obtaining optimal solution	BT2	PO2	CO3
7	Explain Travelling salesman method	BT2	PO3	CO3
8	Explain Errors in networking	BT1	PO2	CO3
9	Write procedure of graphical method to solve 2Xn games	BT3	PO4	CO3
10	Explain the cost associate with inventories	BT4	PO5	CO4
11	Travelling salesman method	BT3	PO3	CO3
12	Write rules for drawing net work diagram	BT2	PO1	C04
13	Explain the differences between CPM and PERT	BT2	PO2	C04
14	n jobs – 2 machines problem	BT1	PO3	CO5
15	n jobs – 3 machines problem	BT1	PO3	CO5

III BSC COMPUTATIONAL MATHEMATICS (HONOURS)

Course 10: APPLIED STATISTICS (MINOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Explain time series	BT1	PO2	C01
2	Explain about trend and its measures	BT3	PO3	C01
3	Explain seasonal variations	BT2	P02	C02
4	Explain cyclical variations	BT1	PO1	CO2
5	Explain irregular variations	BT3	PO4	CO3
6	Explain time reversal test	BT2	PO2	CO3
7	Explain factor reversal test	BT2	PO3	CO3
8	Explain about base shifting	BT1	PO2	CO3
9	Explain about splicing	BT3	PO5	CO2
10	What are the sources of vital statistics?	BT3	PO3	CO3
11	Explain various crude and standardized death rates.	BT2	PO1	C04
12	Define complete expectation of life and curate expectation of life.	BT2	PO2	C04
13	Explain about abridged life tables.	BT1	PO3	CO5
14	What are the problems faced in estimating national income	BT3	PO1	CO5
15	Link relative method.			

S.N	Long Questions	BT	PO'S	CO'S
1	Explain the components of time series.	BT1	PO2	C01
2	Explain the estimating trend (straight line) in a time series in detail. What are its merits and demerits?	BT3	PO3	C01
3	Explain ratio to moving averages method to determine seasonal variations in a time series data. What are its merits and demerits?	BT2	P02	C02
4	Explain the various problems involved in the construction of index numbers.	BT1	PO1	CO2
5	Explain the criteria of a good index number	BT3	PO4	CO3
6	What are Cost of living index numbers? How do you construct it?	BT2	PO2	CO3
7	Distinguish between chain based and fixed base index numbers.	BT2	PO3	CO3
8	Explain about base shifting, Splicing and deflation of index numbers.	BT1	PO2	CO3
9	Explain about the functions and organization of CSO	BT3	PO4	CO3
10	Explain the National income and its computation	BT4	PO5	CO4
11	Explain about the functions and organization of NSSO	BT3	PO3	CO3
12	Explain various rates of measuring mortality. Discuss its merits and demerits.	BT2	PO1	C04
13	Explain various measures of fertility. Discuss its merits and demerits of these measures.	BT2	PO2	C04
14	Explain in detail the construction and uses of life tables.	BT1	PO3	CO5
15	Explain GRR and NRR in measuring population growth.			

III BSC COMPUTATIONAL MATHEMATICS (HONOURS)

Course 11:COMPUTATIONAL STATISTICS AND R PROGRAMMING (MINOR PAPER)

Question Bank

S.N	Short Questions	BT	PO'S	CO'S
1	Define computer. What is the difference between System and Application software?	BT1	PO2	C01
2	What are the different types of computer Storages.	BT3	PO3	C01
3	Explain about creating charts in MS – Excel.	BT2	P02	C02
4	Describe the process of creating, saving and editing a workbook in MS Excel.	BT1	PO1	CO2
5	Describe the calculation various measures of central tendency and variability in R.	BT3	PO4	CO3
6	Discuss various types of visualizations in R	BT2	PO2	CO3
7	What are the input and output function available in R Programming?	BT2	PO3	CO3
8	Explain how do you represent data in R.	BT1	PO2	CO3
9	Explain the steps for fitting of straight line in Excel	BT3	PO5	CO2
10	What is p-value? How can you use it in interpretation.	BT3	PO3	CO3
11	Explain Arithmetic & logical operators in R.	BT2	PO1	C04
12	Write about basic functions in R	BT2	PO2	C04
13	Illustrate briefly sort and filter options in Excel.	BT1	PO3	CO5
14	Explain matrix operation using Excel functions.	BT3	PO1	CO5
15	How can you export Excel output to MS-Word.	BT3	PO2	CO5

S.N	Long Questions	BT	PO'S	CO'S
1	Describe basic applications of computer.	BT1	PO2	C01
2	Explain the types of software with examples.	BT3	PO3	C01
3	Explain Block diagram of computer and its components.	BT2	P02	C02
4	Discuss various programming languages their applications	BT1	PO1	CO2
5	Discuss data entry and editing features in Excel.	BT3	PO4	CO3
6	Explain Copy, Paste and Special paste options in Excel.	BT2	PO2	CO3
7	Explain how to create bar, line, and pie charts in Excel	BT2	PO3	CO3
8	Explain the steps for fitting of polynomial and power curves using Excel.	BT1	PO2	CO3
9	Discuss about data analysis Pak and its features.	BT3	PO4	CO3
10	Explain the steps to perform student's t-test using data analysis Pak.	BT4	PO5	CO4
11	Explain the steps to perform ANOVA using data analysis Pak	BT3	PO3	CO3
12	Explain the data types in R – programming.	BT2	PO1	C04
13	Explain Recycling, Filtering&Subsettingrelated to vectors in R.	BT2	PO2	C04
14	Describe vector creation and various operations on vectors in R with examples.	BT1	PO3	CO5
15	Explain the creation of matrix and various operations on matrices in R			

CERTIFICATE COURSE

S.NO	COURSE
1	DATA ANALYSIS USING R-PROGRAMMING

GOVERNMENT COLLEGE(AUTONOMOUS) RAJAHMUNDRY

DEPARTMENT OF STATISTICS

UG-CERTIFICATECOURSE-2025-26

SEMESTER-IV

Common for all B.A, B.Sc, B.Com,

DATA ANALYSIS USING R-PROGRAMMING

(Model Paper)

Time- 2 Hours **Marks-50M**

SECTION-A

Answer any FIVE questions. All question carries equal marks 5x10=50 M

1. Define Data Analytics and Explain Scope and Development of Data Analytics
2. Explain types of Classification in Data Analytics with examples
3. Explain various variables and Data types in R-programming?
4. Explain Terms Control Structures, Array, Matrix, Vectors, Factors, Functions
5. Explain Data Visualization using R Reading and getting data into R
6. Explain Charts and Graphs in R language
7. Explain any probability distributions using R
8. Explain Non-Parametric tests using R with examples