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## UG DEGREE END SEMESTER EXAMINATIONS – APRIL 2025.

(For those admitted in June 2021 and later)

## PROGRAMME AND BRANCH: B.Sc., STATISTICS

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
V	PART - III	CORE	U21ST510	DATA ANALYSIS USING R

Date &amp; Session: 28.04.2025/FN

Time: 3 hours

Maximum: 75 Marks

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer <u>ALL</u> Questions.
CO1	K1	1.	Which function to find the length of character or numeric? a) nchar( )                      b) charn( )                      c) cn( )                      d) nc( )
CO1	K1	2.	Which data type in R represents categorical variables? a) Numeric                      b) Character                      c) Factor                      d) Logical
CO2	K2	3.	Which package use easily extract HTML table in R? a) XL                      b) XML                      c) EXML                      d) XLM
CO2	K2	4.	Which function is commonly used to read Excel files into R? a) read_excel()                      b) read_xlsx()                      c) read_csv()                      d) fread()
CO3	K3	5.	Which command is used to return a value and exit the function? a) return( )                      b) ret( )                      c) turn( )                      d) retn( )
CO3	K3	6.	What is the purpose of default arguments in a function? a) To allow a function to accept only fixed values b) To provide default values if no argument is passed c) To limit the number of arguments a function can take d) To enforce type safety in R
CO4	K4	7.	In R, 'apply' function must be used on a) Graph                      b) Control                      c) Length                      d) Matrix
CO4	K4	8.	Which apply function tries to simplify the result into a vector or matrix when possible? a) apply()                      b) lapply()                      c) sapply()                      d) tapply()
CO5	K5	9.	Which function is used to compute covariance between two variables? a) cor()                      b) cov()                      c) var()                      d) sd()
CO5	K5	10.	What does ANOVA test for? a) Differences between two means b) Differences between three or more means c) The correlation between variables d) The relationship between independent and dependent variables
Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer <u>ALL</u> Questions Choosing either (a) or (b)
CO1	K1	11a.	Write a short note on data frames in R.
CO1	K1	11b.	Define: (i) Matrices (ii) Arrays

(OR)

CO2	K2	12a.	Explain about the data extraction from website in R. <b>(OR)</b>
CO2	K2	12b.	Write about <i>ggplot 2</i> line graphs.
CO3	K3	13a.	How would you explain about return values with suitable example? <b>(OR)</b>
CO3	K3	13b.	Illustrate the default arguments and extra arguments of function arguments.
CO4	K4	14a.	Write the function of 'plyr' package. <b>(OR)</b>
CO4	K4	14b.	Elaborate the p.m.f for the binomial distribution. Also, explain its main functions in R.
CO5	K5	15a.	How would you interpret a one sample t-test? Show its basic syntax. <b>(OR)</b>
CO5	K5	15b.	How would you interpret ANOVA in R with an example.

Course Outcome	Bloom's K-level	Q. No	<p style="text-align: center;"><b>SECTION – C (5 X 8 = 40 Marks)</b>  <b>Answer <u>ALL</u> Questions Choosing either (a) or (b)</b></p>
CO1	K1	16a.	Explain how to define a variable and its role in R. <b>(OR)</b>
CO1	K1	16b.	Describe about the vector and its operations in R.
CO2	K2	17a.	Classify the R binary files. <b>(OR)</b>
CO2	K2	17b.	Write in detail about base graphics in R.
CO3	K3	18a.	Demonstrate the usage of switch and ifelse statements in R with suitable examples. <b>(OR)</b>
CO3	K3	18b.	Examine the different types of loops in R with examples.
CO4	K4	19a.	Explain the functions apply, lapply, sapply, and mapply in R with examples and their applications. <b>(OR)</b>
CO4	K4	19b.	Illustrate the Normal and Poisson distribution with their function.
CO5	K5	20a.	Assess the significance of correlation and covariance in statistical analysis and demonstrate their calculation in R. <b>(OR)</b>
CO5	K5	20b.	How to measure the two-sample t-test in R? Also, Interpret its result.