



Third Semester B.E./B.Tech. Degree Examination, June/July 2026
Data Analytics with R

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
 2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Explain fundamental mathematical operations in R.	6	L2	CO1
	b.	Define Function. Write R program to find area of circle and square.	8	L2	CO1
	c.	Explain Packages in R.	6	L2	CO1
OR					
Q.2	a.	List and explain different flow control statement in R with an example.	8	L2	CO1
	b.	Which are the different looping statement in R. Explain with an example.	8	L2	CO1
	c.	Develop R program using functions to find all the prime numbers upto a specified number by the method of Sieve of Eratosthenes.	4	L2	CO1
Module – 2					
Q.3	a.	List and explain different data types in R.	10	L2	CO1
	b.	What are factors in R and how are they different from regular numeric or character vectors? Provide an example illustrating the use of factors in data analysis.	10	L2	CO1
OR					
Q.4	a.	Define a list in R. and explain the role of storing heterogeneous data types. Provide an examples of creating and accessing list in R.	8	L2	CO1
	b.	Write the importance of string manipulation in data preprocessing task. Provide example of common string operators in R.	8	L2	CO1
	c.	Develop R program to create two 3×3 matrices A and B and perform the operations i) Transpose ii) Add iii) Subtraction iv) Multiplication.	4	L2	CO1

Module – 3

Q.5	a.	Design a dataframe in R for storing about 20 employee details. Create a CSV file named input CSV that defines all the required information about the employee such as id, name, salary, SI-date, dept. Import into R and do the following analysis : i) Find the total number of rows and columns ii) Find the maximum salary iii) Retrieve the details of the employee with maximum salary iv) Retrieve all the employees working in the IT department v) Retrieve the employees in the IT department whose salary is greater than 20000 and write these detail in to another file output.CSV.	10	L3	CO3
	b.	How do you manipulate strings in R. Explain with R example?	6	L2	CO3
	c.	Write a note on Data Reshaping.	4	L2	CO3

OR

Q.6	a.	List and explain the different file format can be imported and exported in R.	10	L2	CO3
	b.	With an example, explain the significance of different grouping functions in R used for data analysis.	10	L2	CO3

Module – 4

Q.7	a.	Describe the purpose of scatter plot in visualizing relationship between two variables. Provide an example of real world scenario where a scatter plot is useful.	10	L3	CO4
	b.	Explain data visualization using bar plot in R programming.	10	L2	CO4

OR

Q.8	a.	Explain how the five number of summary is represented in a box plot. Provide an example scenario where such a comparison is insightful.	10	L2	CO3
	b.	Explain the use of line plots in data visualization.	10	L2	CO3

Module – 5

Q.9	a.	Explain different statistical measures used in R with an example.	10	L2	CO3
	b.	Explain binomial distribution in R. List and explain different built in functions used in R to generate binomial distribution.	10	L2	CO3

OR

Q.10	a.	Explain the concept of correlation and its significance in analyzing relationship between two variables. Discuss the range of correlation coefficient and their interpretation.	10	L2	CO3
	b.	Define Linear Regression and explain its components. Explain the importance of regression slope and intercept in interpreting the result.	10	L2	CO3
