

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Sixth Semester B.Tech Degree (R,S) Examination May 2024 (2019 Scheme)

**Course Code: AIT362****Course Name: PROGRAMMING IN R**

Max. Marks: 100

Duration: 3 Hours

**PART A***Answer all questions, each carries 3 marks.***Marks**

- |    |   |     |
|----|---|-----|
| 1  | Write an R program to check whether a number is odd or even.                | (3) |
| 2  | Explain matrix in R with an example.  | (3) |
| 3  | List different methods used in binning data.                                | (3) |
| 4  | Explain why data cleaning is considered an important task in data analysis. | (3) |
| 5  | Define normal distribution in R.  | (3) |
| 6  | Explain the t-test.   | (3) |
| 7  | Explain the function used to plot scatter plots with an R program.          | (3) |
| 8  | Explain how to plot a pie chart in R.                                       | (3) |
| 9  | Explain Nonlinear least squares.  | (3) |
| 10 | State the applications of regression models.                                | (3) |

**PART B***Answer one question from each module, each carries 14 marks.***Module I**

- |    |   |     |
|----|---|-----|
| 11 | a) Write an R program to find the factorial of a number.      | (8) |
|    | b) Illustrate different vector operations in R with examples. | (6) |

**OR**

- |    |   |     |
|----|---|-----|
| 12 | a) Explain with examples if, if-else and switch statements in R.                              | (6) |
|    | b) Write an R program to extract 3rd and 5th rows with 1st and 3rd columns from a data frame. | (8) |

**Module II**

- |    |  |     |
|----|--|-----|
| 13 | a) Write an R program to create a data frame using two vectors and display the duplicate elements and unique rows in the data frame. | (7) |
|    | b) Illustrate transformation functions in R.   | (7) |

**OR**

- 14 a) Explain how data is imported from external files with an R program. (7)  
 b) Write an R program to export the following data to a CSV file. (7)

	id	name	gender	dob	country
1	10	Daisey	M	1990-10-02	Brazil
2	11	Harry	M	1981-03-24	Canada
3	12	Rachelle	F	1987-06-14	France
4	13	Zara	F	1985-08-16	Guinea

**Module III**

- 15 a) Explain how the statistical test is performed using R functions. (7)  
 b) Explain the common distribution type arguments used in R functions for statistical analysis. (7)

**OR**

- 16 a) Explain different summary statistics functions in R. (7)  
 b) Explain different parametric tests in R. (7)

**Module IV**

- 17 a) Explain ggplot() with an example. (8)  
 b) Write R program to create pie chart for the following data. (6)

Housing	600
Food	300
Clothes	150
Entertainment	100
Others	200

**OR**

- 18 a) Explain lattice function in data visualization. (8)  
 b) Illustrate customizing charts in data visualization. (6)

**Module V**

- 19 a) Explain corrective measures of unusual observations in regression modelling. (8)  
 b) Compare and contrast logistic regression with poisson regression. (6)

**OR**

- 20 a) Explain linear and multiple regression. (7)  
 b) Illustrate model fitting in simple linear model. (7)