

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Artificial Intelligence and Data Science) / DS (Sem.-6)

DATA ANALYTICS USING R

Subject Code : BTITCS 601-20

M.Code : 93954

Date of Examination : 20-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION - A

1. Write briefly :

- a. Discuss the prominent characteristics of data.
- b. Differentiate between structured and unstructured data.
- c. What is a factor in R? Give examples.
- d. Discuss the usage of the function `randomForest()` in R.
- e. Explain the process of giving names to the rows, columns and matrices in an array.
- f. Explain various ways of creating vectors in R.
- g. Discuss the usage of functions `surv()` and `survfit()`.
- h. Explain the usage of the package "party" and the function `ctree()` in creating and analyzing decision tree.
- i. Discuss the various loop control statements available in R.
- j. How is data read from csv and xml files into R Illustrate?

SECTION - B

2. Define data analytics and explain its significance in modern business environments. Provide examples of real-world applications of data analytics.
3. Explain variables and data types in R programming. Provide examples of different data types and their usage in R.
4. Discuss various R charts and graphs used for data visualization, including histograms, boxplots, bar charts, line graphs, scatterplots and pie charts. Explain when to use each type of visualization.
5. Describe time series analysis techniques using R. Discuss how time series data is analyzed and interpreted in the context of data analytics.
6. Discuss reinforcement learning techniques for creating data for analytics.

SECTION - C

7. Define linear regression and logistic regression. Explain how the functions `lm()` and `glm()` are used to create linear regression model and logistic regression model, respectively in R. Discuss the applications of regression techniques in predictive modeling and provide examples of real-world scenarios where they are used.
8. Describe the concept of active learning and how it can be used to create data for analytics? Discuss the advantages and challenges of active learning approaches.
9. Discuss the characteristics of normal and binomial distributions. Discuss the built-in functions of R that are used to generate :
 - a) normal distribution
 - b) binomial distribution.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.