

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER– IV EXAMINATION – SUMMER - 2017

Subject Code:3640005

Date:06/06/2017

Subject Name: Data Analytics with R

Time:10:30 A.M. – 01:00 P.M.

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a) Do as directed: 07**
1. Give the difference between & and &&.
 2. .result_1 is valid variable name? Explain.
 3. Give output for the following code in R.

```
v <- LETTERS[1:4]
for ( i in v ) {
    print(i)
}
```
 4. Give the use of %*% operator in R.
 5. Give the function name to delete a variable in R.
 6. How to sort character vectors in reverse order?
 7. Give the difference between Barchart and Histogram.
- (b) What is Data Analytics? Explain classification of Data with example. 07**
- Q.2 (a) i) What is R? Give features of R. 03**
- ii) Give the syntax to create a vector in R. Explain the concept of vector recycling with example. 04**
- (b) What is list? Create a list which contains one vector having 5 numbers and one matrix of size 2x3. Give names to the list elements “Vector” and “Matrix”. Print the list. Convert list to vector. 07**
- OR**
- (b) Explain array() and apply() function with example. 07**
- Q.3 (a) Explain UDF in R. Also explain the concept of default argument. Create UDF to print square from 1 to n (pass n as an argument). 07**
- (b) Write R script to connect MySQL Database in R. 07**
- a. Create a connection object for the database named Test.
 - b. Insert 5 records in table named Employee (Emp_id, name, salary).
 - c. Fetch all the records of Employee table in R.
 - d. Drop Employee table.
- OR**
- Q.3 (a) Explain pie() function with all parameters. Explain legend of chart with example. 07**

P.T.O.

- (b) Write R script to create data frame “student” with the fields of stud_id, stud_name, email_id and mobile_no. Perform following operations: **07**
- a. Display data of data frame
 - b. Display summary of data frame
 - c. Display structure of data frame
 - d. Extract and display only stud_name and mobile_no from data frame

- Q.4** (a) What is Linear Regression? Give steps to establish a Linear Regression in R. Explain lm() function with example. **07**
- (b) What is a Decision Tree? How does it work? Explain ctree() function of party package with example. **07**

OR

- Q.4** (a) What is Normal Distribution? Explain following function used in R for Normal distribution. **07**
- i) dnorm()
 - ii) pnorm()
 - iii) qnorm()
 - iv) rnorm()
- (b) i) What is Logistic Regression? Explain glm() function. **03**
- ii) What is Survival Analysis? Give syntax of Surv () and survfit() function. **04**

- Q.5** (a) Write a short note on Applications of Data Analytics. **07**
- (b) What is Prescriptive Analytics? Explain data creation for analytics through active learning. **07**

OR

- Q.5** (a) Read the csv file named input.csv (id, name, salary, dept) into R. Print number of rows and columns of file. Write records of IT department in it_dept.csv **07**
- (b) What is Prescriptive Analytics? Explain data creation for analytics through designed experiments. **07**
