

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA– SEMESTER –IV EXAMINATION –SUMMER-2019

Subject Code:3640005

Date: 21-05-2019

Subject Name: Data Analytics with R

Time:10.30 am to 1.00 pm

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) Answer the following terms. **07**

- (1) `t <- 10 < 13` then what will be the value of `t`?
- (2) `z <- c(1:3,NA)` then what will be the result of `is.na(z)` ?
- (3) Write output of `paste(c("X","Y"), 1:4, sep="-")`.
- (4) `x <- c(1:10)` then what will be result of `x[x %% 2 == 0]`?
- (5) `a <- c(1,2,4,8)` and `b <- a*a+2*a+1` then what will be value of `b`?
- (6) `a <- c(1:4)` and `dim(a) <- c(2,2)` then write output of `print(a)`.
- (7) `a <- c("a", "b", "c")` then write output of `mode(a)`.

(b) Explain following terms. **07**

- (1) List
- (2) Factor
- (3) Array
- (4) Data frame
- (5) Data set
- (6) Data analytics
- (7) Solve() function

Q.2 (a) Explain data analytics with its various applications. **07**

(b) What is vector? How it can be created in R? Explain index vector by using suitable example. **07**

OR

(b) (1) Explain logical vector with example **03**

(2) Explain classification of data with example. **04**

Q.3 (a) Write an R script that will create data frame of product having following fields. **07**

- (1) Product name (2) Product price (3) Product quantity.

Perform following operations.

- (a) Display data of data frame
- (b) Display structure of data frame
- (c) Display product with highest price
- (d) Display product in alphabetical order of product name
- (e) Display product name and quantity only for each product.

(b) What is list? Explain it to create and access elements of it with suitable example. **07**

OR

- Q.3** (a) Explain reading and writing csv and JSON file with appropriate packages. **07**
(b) Write an R script that will receive N numbers and calculate mean, standard deviation, minimum and maximum. Plot bar chart of input numbers. **07**

- Q.4** (a) What is an array? Explain various ways to create an array in R. **07**
(b) Explain histogram and pie chart in R with necessary packages and functions. **07**

OR

- Q.4** (a) Explain normal and binomial distribution with example. **07**
(b) What is regression analysis? Explain linear and multiple regression in R. **07**
- Q.5** (a) Explain logistic and survival analysis. **07**
(b) Define prescriptive analysis. Explain creating data using active and reinforcement learning. **07**

OR

- Q.5** (a) Explain various control structure in R with sample example code. **07**
(b) Explain following functions. **07**
- (1) tapply ()
 - (2) c ()
 - (3) attach ()
 - (4) detach ()
 - (5) read.table ()
 - (6) scan ()
 - (7) data ()
