

**GUJARAT TECHNOLOGICAL UNIVERSITY****MCA INTEGRATED– SEMESTER-VIII EXAMINATION –SUMMER-2020****Subject Code: 4480602****Date: 05-11-2020****Subject Name: Data Analytics with R****Time: 02:30 PM to 05:00 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 following questions **07**
- i.  $m \leftarrow \text{matrix}(c(1:4), 2, 2)$  then  $t(m) =$  \_\_\_\_\_.
  - ii. In `abline(a, b)` function, `b` represents \_\_\_\_\_ of a line.
  - iii. What is the function used to test objects (returns a logical operator) if they are NaN?
  - iv. R files has an extension \_\_\_\_\_.
  - v. In R language, a vector is defined that it can only contain objects of the \_\_\_\_\_.
  - vi. \_\_\_\_\_ function is used to watch for all available packages in library.
  - vii. Function used for linear regression in R is \_\_\_\_\_.
- (b)** What is data analytics? Explain types of data analytics. **07**
- Q.2 (a)** Explain following functions : **07**
- i. `list()`
  - ii. `paste()`
  - iii. `plot()`
  - iv. `ts()`
  - v. `setwd()`
  - vi. `assign()`
  - vii. `class()`
- (b)** Explain data type in detail with example. **07**
- OR**
- (b)** Describe lazy evaluation of function. Also explain calling a function (i) with argument (ii) without argument with example **07**
- Q.3 (a)** How to read data from excel and database? Explain in detail **07**
- (b)** What is high level and low level graphics in R? Explain histogram and pie chart **07**

**OR**

**Q.3 (a)** Create a data frame for the following data of student marks of three subjects. **07**

Roll_No.	Name	DM	CONM	SM
S0001	XYZ	60	70	55
S0002	ABC	50	80	30
S0003	PQR	50	60	45
S0004	DEF	75	85	75
S0005	RST	20	50	40

Perform following operations.

- i. Display all records in alphabetical order of names.
- ii. Display all records in descending order of total marks.
- iii. List the student name having highest percentage.
- iv. Plot stacked bar plot representing marks of all three subjects for every student.

**(b)** Explain pie ( ) and hist() functions with its all parameters. **07**

**Q.4 (a)** Write an R script that will read N numbers from keyboard and categorize this read data into five frequency classes of 0-10, 10-20, 20-30, 30-40 and 40-50. Display frequency distribution class wise. **07**

**(b)** What is Survival Analysis? Give syntax of surv ( ) and survfit( ) function. **07**

**OR**

**Q.4 (a)** Write a code to read a .csv file containing enrollment number, marks obtained out of 700. Along with displaying data, print minimum marks, maximum marks, mean, median, mode, average marks. **07**

**(b)** Explain time series and logistic regression with example. **07**

**Q.5 (a)** What is Normal Distribution? Explain following function used in R for Normal distribution. **07**

i) dnorm( )

ii) pnorm( )

**(b)** Explain three different ways to create a matrix in R. How a created matrix can be initialized with 0. State the difference between "\*" and "%\*%" to multiply two matrices. **07**

**OR**

**Q.5 (a)** Explain various types of loops in R. **07**

**(b)** Define prescriptive analysis and explain creating data for analytics through active and reinforcement learning. **07**

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