b. What are the limitations of k-means clustering method? How to perform Partitioning Around Medoids in R with the help of 'pam()' function? **8M**

* * *

Reg. No: | | | | | | | | | | |

VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE

(AUTONOMOUS)

II/IV B.Tech. DEGREE EXAMINATION, MARCH, 2021

Fourth Semester

INFORMATION TECHNOLOGY

17IT3401 STATISTICS WITH R

Time: 3hours ***Max. Marks: 70***

Part-A is compulsory

Answer One Question from each Unit of Part-B

Answer to any single question or its part shall be written at one place only

PART-A

10 x 1 = 10M

1. a. Write the advantages of R programming language.
   b. What is a compound test in R?
   c. What is a regular expression in R?
   d. What is the difference between cbind and rbind?
   e. Define covariance.
   f. What is the use of regression analysis?
   g. What are the different sorting algorithms available in R?
   h. What is recursion function in R?
   i. What is the difference between data frame and matrix in R?
   j. Compute the mean of a vector of 100 random numbers.

PART-B

4 x 15 = 60M

UNIT-I

2. a. Write R function to display prime numbers up to a given range. **7M**

   b. What is a vector? How to create it? Create a vector A of elements 5, 2, -2, 6, 7, 10, 12, 14, 15 and from it create a vector Y containing elements of A > 6. **8M**

(or)

3. a. How to create variables in R? Explain various data types available. **8M**

   b. Explain the following sentence:
   Functions in R have (almost) no side effects. **7M**

UNIT-II

4. a. Explain
   i) Different set operations
   ii) Minima and maxima with suitable examples **7M**

   b. Explain how to implement simulations in R with examples? **8M**

(or)

5. a. Explain various joins with suitable examples. **7M**

   b. Explain about ddply and llply with necessary formulas and examples. **8M**

UNIT-III

6. a. Explain
   i) Two-Sample t-Test and
   ii) Paired Two-Sample t-Test functions **8M**

   b. Explain Gaussian distribution for the random normal variables and also draw the corresponding plot. **7M**

(or)

7. a. Explain about summary function and quantile function with examples for a given sample data. **8M**

   b. If only 5% kids can secure A grade in a paper, find the probability of at most 2 out of 10 kids getting A grade in that paper. **7M**

UNIT-IV

8. a. Briefly explain about non linear least squares. **8M**

   b. Discuss about random forests. **7M**

(or)

9. a. Explain vector autoregressive model and GARCH model for fitting. **7M**