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

VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE

(AUTONOMOUS)

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

Fourth Semester

INFORMATION TECHNOLOGY

17IT3401 STATISTICS WITH R

Time: 3 hours ***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 a short note on command line interface.

   b. Define calling function.

   c. Explain aggregate function in R programming.

   d. Write a short note on Calculating a Probability.

   e. Define Weighted mean.

   f. Explain normal distribution.

   g. Mention any two applications of t-tests.

   h. Define simple linear Regression.

   i. Define Multiple Regression.

   j. Write a short note on non linear least squares.

PART-B

4 x 15 = 60M

UNIT-I

2. a. Explain about basic math and variables of R. **7M**

   b. Discuss about matrices in R. **8M**

(or)

3. a. Explain about return values in R programming. **7M**

   b. Write about control statements in R. **8M**

UNIT-II

4. a. What are set operations? Give examples of each. **7M**

   b. Explain apply method in R. Write about lapply, sapply with suitable examples? **8M**

(or)

5. a. Write about the following with suitable example **7M**
   a) Cumulative Sum b) Cumulative Max
   c) Cumulative Min d) Cumulative product

   b. Write about sort, rank and order functions with examples. **8M**

UNIT–III

6. a. Fit a Binomial distribution to the following data **7M**
   x= 0 1 2 3 4 5
   f= 2 16 28 12 9 3

   b. What is Poisson distribution? Explain with examples. **8M**

(or)

7. a. Explain concepts of correlation and covariance with examples. **7M**

   b. Discuss about ANOVA. **8M**

UNIT-IV

8. a. Using the least square method fit a straight line for the following data: **7M**

x	-1	0	1	2	3	4
f(x)	1	0	1	4	5	5

   b. Write in detail about Random Forest. **8M**

(or)

9. a. Explain Autoregressive Moving Average model in R programming. **7M**

   b. Discuss about GARCH family of models. **8M**

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