

Roll No. : .....

Total No. of Questions : 16 ]

[ Total No. of Printed Pages : 3

# SCOM-319

M.Sc. (IIIrd Semester) Examination, 2021

## COMPUTER SCIENCE

Paper - MCS-305 (A)  
(Data Analysis Using R)

Time : 1½ Hours ]

[ Maximum Marks : 40

### Section-A

(Marks : 1 × 10 = 10)

*Note* :- Answer all *ten* questions (Answer limit **50** words). Each question carries 1 mark.

### Section-B

(Marks : 3 × 5 = 15)

*Note* :- Answer any *five* questions by selecting at least *one* question from each Unit (Answer limit **200** words). Each question carries 3 marks.

### Section-C

(Marks : 5 × 3 = 15)

*Note* :- Answer any *three* questions by selecting *one* question from each Unit (Answer limit **500** words). Each question carries 5 marks.

### Section-A

1 each

1. (i) What is the Mean and Variance of Standard Normal Distribution ?
- (ii) What do you mean by Random Variable ?

BI-998

( 1 )

SCOM-319 P.T.O.

- (iii) What is the probability of getting 'S' ? When you roll the dice once ?
- (iv) What do you mean by Factors in R ?
- (v) Write syntax to use a for loop in R.
- (vi) What is the output of the following code fragment :  

```
str1 = "welcome students"  
cat (str1)
```
- (vii) What do you mean by Skewness ?
- (viii) Which function is used to find the no. of Columns in a data frame ?
- (ix) What will the following line do in R ?  

```
plot (1, 3)
```
- (x) What do you mean by null hypothesis ?

**Section-B**

3 each

**Unit-I**

- 2. Explain the concept of sampling.
- 3. Explain the concept of confidence interval.
- 4. Two cubical dice are thrown and their scores added together. If  $X =$  "sum of scores on two dice", what is  $P(X \text{ is divisible by } 4)$  ?

**Unit-II**

- 5. Write a program to find the factorial of a number in R.
- 6. Explain how to create a function in R and how to call it with example ?
- 7. Explain any *two* operations on vectors with examples.

**Unit-III**

- 8. Describe how to access the items of a data frame with examples.
- 9. How average value, the middle value and most common value can be retrieved of a variable from a data set ?
- 10. What kind of information can be displayed using a Boxplot ?

**Section–C**

5 each

**Unit–I**

11. Describe null and alternate hypothesis using examples.
12. Why normal distribution is so important ? Explain.

**Unit–II**

13. Write an R program to find the sum of squares of first 10 natural numbers without using formula.
14. Explain the input and output statements in R with examples.

**Unit–III**

15. Assume you have a cdr file named student with fields name, age, marks for 5 students of a class. Write the steps how to import this cdr file into R and perform analysis like minimum and maximum of marks.
16. Describe any *three* functions to plot a graph in R, with examples.