Examination Session June-2022

(First Semester)

CDSA-102

(Certificate in Data Science & Applications)

[Programming For Data Science]

Time : 2 Hours]   **[Max. Marks : 100**

Note : This paper is of hundred (100) marks divided into two (02) sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

SECTION—A

(Long Answer Type Questions)   **2×26 = 52**

Note : Section 'A' contains Five (05) long answer type questions of Twenty Six (26) marks each. Learners are required to answer any Two (02) questions only.

2×26 = 52

1. (a) What is Programming ? Why to learn programming ?   14

    (b) What are the various computer programming languages ? Explain 5 key features of any two languages.   12

2. (a) How to visualize data in python ? Explain with example.   14

    (b) Point out various skills required for programming. What are various career options available for programmers ?   12

4. (a) How many types of Iterative Statements (loops) are used in Python ? Explain them with example.   6

    (b) Illustrate the use of Python in real world applications.   6

5. What are various operators used in Python programming language ? Explain with example.   12

6. Explain with the help of example how we use Strings in Python.   12

7. What are functions ? Name and explain any 4 functions used in Python.   12

8. What are various Plots and Bars used in R ? Explain with examples.   12

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3. (a) How to Create Categorical Variables in R ? Explain with example. 14

   (b) Differentiate between Python & R programming language. 12

4. (a) Write a function to import and export data in R. 14

   (b) Explain the conditional statements used in Python. 12

5. (a) What is type conversion ? How it is implemented in Python ? 14

   (b) With the help of an example differentiate between Tuple & Dictionary data types used in Python. 12

SECTION—B

(Short Answer Type Questions) **4×12 = 48**

Note : Section 'B' contains eight (08) short answer type questions of Twelve (12) marks each. Learners are required to answer any four (04) questions only.

$$4 \times 12 = 48$$

1. (a) Explain Function Factor ( ) with example.   6

   (b) How to create and use continuous variables in R ? 6

2. (a) How can we convert Quantitative data to Qualitative in R ? Explain.   6

   (b) What is the concept of Data Frame used in R ? 6

3. (a) What is Linear Regression ? Explain with proper example.   6

   (b) Write a Python program to check a number is negative/positive/zero.   6