# P-1160

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# CDSA-102

**Programming for Data Science**

Certificate in Data Science & Applications (CDSA)

1st Semester Examination, 2023 (June)

**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. Candidates should limit their answer to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

## SECTION–A

## (Long Answer Type Questions)

**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.** What are the skills required for Programming? Explain all the career option available for programmers. How do we create continuous variables in R? Explain with suitable example. [26]

**2.** (a) What are the data frames? Write its significance in R-Language? [13]

(b) What are keywords? Explain various keywords present in Python Language. [13]

**3.** Differentiate between Python and R programming language. How loops are applied in R programming? Explain with an example. [26]

**4.** What is multivariate data? Explain various tools available for multivariate data with proper example. How scatter plots are used in R for visualizing data? Explain with an example. [26]

**5.** (a) Explain the use of continue and break statements in Python. [10]

(b) Explain the following terms :

[i] Modulus Operator.

[ii] The function factor()

[iii] Error Bars in 2 dimension.

[iv] Any two Math functions in Python. [ 16]

## SECTION–B

## (Short Answer Type Questions)

**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.

(4×12=48)

**1.** What is chained conditional statement in Python? Explain. [12]

**2.** What is the difference between TUPLE and LIST in Python? Explain with example. [12]

**3.** What are Python's dictionaries? Explain how loops are used in dictionaries. [12]

**4.** How to export data from R? Write all the steps used in the process of exporting data from R Language. [12]

**5.** Explain fitting distribution in R with example. [12]

**6.** What are Qualitative variables? Explain. [12]

**7.** Write a Python program to check that a given value is a positive or negative number or non-numeric. [12]

**8.** How factors are stored in R? Explain with an example. [12]