

# S-1017

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Roll No. ....

## CDSA-102

### Programming for Data Science

Certificate in Data Science & Applications (CDSA)

1st Semester Examination, 2022 (Dec.)

**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)

**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) Elaborate Programming in your own words. What are the various types of Programming Languages? Explain in detail. [13]
- (b) What is Qualitative variable? How do we create categorical variable in R? Explain with example. [13]

2. (a) What is the process (steps) of importing and exporting data in R? Explain. [13]  
(b) How data frame are equivalent to spreadsheet? Explain with example. [13]
3. (a) Differentiate between Python and R programming language. [13]  
(b) What is a variable? How a variable is used in Python Language? Explain with suitable example. [13]
4. Explain various operators used in Python programming language. Also, define various conditional statements used in Python. [26]
5. How a string is used in Python? Explain any five string methods used in python. What is type conversion? How it is implemented in Python? [26]

## **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 skills are required to become a good programmer? Explain. [12]

2. Differentiate between Qualitative and Quantitative Variables.  
What is data wrangling? Explain. [12]
  3. Explain all iterative statements used in Python Language.  
Also, write a Python program to check a number is even or odd. [12]
  4. Explain Hypothesis testing of factors. [12]
  5. What are functions? How can we use an user defined functions in Python? Explain with example. [12]
  6. Explain LIST data-type in Python? What are various pros and cons of LIST data-type? Explain. [12]
  7. How do we create and use continuous variables in R? Explain. [12]
  8. What is linear regression? Explain with suitable example. [12]
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