

CDSA-102

PROGRAMMING FOR DATA SCIENCE

Certificate in Data Science & Applications (CDSA)

First Semester Examination, 2021 (Winter)

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) How many types of programming languages? Explain various programming approaches with suitable example. [14]

- (b) Discuss about various data manipulation techniques available in R. [12]
2. (a) What are three common ways to perform bivariate analysis? Explain with example. [14]
- (b) What do you mean by importing and exporting of data? How to export data from R to CSV? [12]
3. (a) Explain all the types of R Objects with suitable example. [14]
- (b) Write down the name of libraries in R that can be used for data visualization. Explain any four of them. [12]
4. (a) Describe Arithmetic Operators, Assignment Operators, Comparison Operators, Logical Operators and Bitwise Operators (in terms of Python / R). [14]
- (b) What are the different features of Object Oriented supported by Python. [12]
5. (a) What are the different loop control statements available in Python? Explain with suitable examples. [14]
- (b) Explain the following Python language constructs :
- (i) Quotes.
 - (ii) Multiple Statement.
 - (iii) Indentation. [12]

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. (a) Explain different data structures in R. [6]
(b) What statements are used for input and output in R Language? [6]
2. (a) How to get the data in and out from R Language? [6]
(b) What are the data frames? Write its significance in R Language? [6]
3. (a) Explain about Variables, Constants and Data Types in R Programming. [6]
(b) Write about scatter plot and histograms with examples? Where scatter and histograms are used? [6]
4. (a) How to convert a quantitative data to qualitative data? Explain with example. [6]
(b) What are the basic tools for multivariate data? Explain. [6]

5. (a) Write a short note on Python Dictionaries? [6]
(b) What is Python? Describe its features and applications? [6]
6. (a) Write a short note on Fruitful function and Void Function. [6]
(b) What is tuple? How literals of type tuple are written? [6]
7. (a) Discuss the int(), float(), str(), chr() and complex() type conversion functions with suitable examples. [6]
(b) Differentiate between lists and tuples in Python? [6]
8. (a) Explain the concept of scope and lifetime of variables in Python programming language. [6]
(b) Illustrate the different types of control flow statements available in Python. [6]
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