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Roll No.

CDSA-101

FOUNDATIONS OF DATA SCIENCE & DATA ANALYSIS TOOLS

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) What is Data Science? What are the challenges faced by Data Science Technology? [14]

- (b) What do you mean by data? Differentiate between structured and unstructured data. Explain with proper example. [12]
2. (a) What is R programming? What are the Applications of R Programming? [14]
- (b) Define Big Data in your own words. Why Big Data is used? [12]
3. (a) What are the applications of Big Data in industry? [14]
- (b) Why Python is used? How is it different from R Programming? [12]
4. (a) Write any 7 functions with their usage in MS-Excel? [14]
- (b) What is Database? Explain the various database models. [12]
5. (a) Why SPSS is used? Explain its role in industry for data analysis purpose. [14]
- (b) Differentiate between List and Tuple data types used in Python. Justify your answer with example. [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) What are the different components of Data Science? Explain. [6]
- (b) Explain the role and responsibilities of a Data Scientist in an organization. [6]
2. (a) Why Data Analytics is popular? Explain. [6]
- (b) What do you understand by programming language translator? Differentiate between various translators available. [6]
3. (a) What is SQL? Write commands to create and delete a table in SQL? [6]
- (b) What is Univariate analysis in SPSS? Briefly explain. [6]
4. (a) Explain three types of commands used in SQL. [6]
- (b) Explain T-test with the help of an example. [6]

5. What are various operators used in Python programming Language? Explain with example. [12]
 6. Explain any six functions used for mathematical operations in MS Excel. [12]
 7. What are the various types of errors occurred during programming? Explain with example. [12]
 8. How to access the element in the 2nd column and 4th row of a matrix name M in R programming language? Explain with suitable example. [12]
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