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CDSA–101

Certificate in Data Science and Applications

(Foundations of Data Science and Data Analysis Tools)

1st Semester Examination, Session December 2024

Time : 2:00 Hrs.   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 answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.*

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.

1. What are the common tools and programming languages used in Data Science, and how do they support the data analysis process ?

2. What types of charts one can create using Excel for data visualization ? Describe how to customize a chart's appearance in Excel.

3. How can you filter data in Excel to show only records that meet certain criteria ? What is the purpose of PivotTables in Excel ?

4. Explain the role of data visualization tools in Data Science. How do they enhance decision-making ?

5. How does Excel enable the use of charts and graphs for mathematical data visualization ?

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.

A–776/CDSA–101 (2)

1. What are some ways to use the "IF" function for data analysis ? Explain with an example.

2. What is Data Science, and how does it differ from traditional data analysis approaches ?

3. What do you mean by relative and absolute cell referencing MS Excel ? Explain using suitable example.

4. Explain the following functions used in MS Excel- COUNT(), COUNTA(), COUNTBLANK(), COUNTIF(), COUNTIFS().

5. How do statistics and machine learning contribute to the foundation of Data Science ? Explain.

6. How can you use conditional formatting to visualize data trends ? Define using a suitable example.

7. How do you use VLOOKUP to find data across different sheets ? Write the suitable steps to perform such task.

8. Give some examples of real-world applications of Data Science in industries such as healthcare, finance, and e-commerce.

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