B.Tech. (Computer Technology) Seventh Semester (C.B.C.S.)

Elective-IV : Data Visualization

P. Pages : 2

Time : Three Hours

PSM/KW/23/2912

Max. Marks : 70

Notes : 1. Solve Question 1 OR Questions No. 2.
2. Solve Question 3 OR Questions No. 4.
3. Solve Question 5 OR Questions No. 6.
4. Solve Question 7 OR Questions No. 8.
5. Solve Question 9 OR Questions No. 10.

1. a) Explain the necessity of Statistics in data visualization. And differentiate between inferential statistics and descriptive statistics. 7

b) Explain about the R and its features and write down the installation steps of R. 7

OR

2. a) What are the basic function used to describe data in R. Explain with suitable examples. 7

b) Write short note on. 7

i) Normal Probability Distribution.

ii) Sampling Distribution.

3. a) Explain the data manipulation packages in R with their usage. 7

b) Explain the data visualization with Watson Studio with suitable example. 7

OR

4. a) Explain the data visualization with R. 7

b) Write about the Watson Studio. Also write the steps to add data to data refinery. 7

5. a) Explain about Python with its features and applications. Write down the steps to install python. 7

b) What is Pandas, and why is it important for data analysis in Python? How do you install Pandas in Python? 7

OR

6. a) Explain different data visualization libraries in Python. 7

b) What is NumPy, and why is it essential for data manipulation in Python? How do you install NumPy in Python? How can you create a NumPy array from a Python list? 7

7. a) Write and explain in detail a python program to draw line graph for following data. 7

$x = [1,2,3,4,5,6]$ $y = [2,4,1,5,2,6]$

Customize the line with green coloured dashed line, blue marker with size 12.

b) What are scatter plots? Explain it with suitable examples. Also explain the characteristics of scatter plots? 7

OR

8. a) Write a Python program to display a horizontal bar chart of the popularity of programming Languages. 7

Sample data:
Programming languages: Java, Python, PHP, JavaScript, C#, C++
Popularity: 22.2, 17.6, 8.8, 8, 7.7, 6.7

b) Explain about word cloud. Which libraries are used to create the word cloud in Python. Explain it with suitable examples. 7

9. a) Explain about Seaborn functionalities and its usage. 7

b) Explain different plots with Seaborn. 7

OR

10. a) Explain is the role of Seaborn in a data analysis. Elaborate it with suitable examples. 7

b) Explain about Folium, and why is it useful for spatial visualization in Python? 7

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