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School of Computing Science and Engineering

B.TECH in Artificial Intelligence and Data Science

Mid Term Examination - Nov 2023

Duration : 90 Minutes

Max Marks : 50

Sem V - E2UR501B - Data Exploration and Visualization

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Create a pivot table from a dataset 'SalesData' with columns 'Product', 'Month', and 'Revenue', summarizing the total revenue for each product and month using python. K3 (6)
- 2) Apply the concept of "cross-tabulation" in data grouping and give an example of its practical application in EDA. K3 (9)
- 3) Discuss the impact of temporal data aggregation in anomaly detection and trend analysis. How does the choice of time intervals influence the insights derived from the data? K4 (8)
- 4) The elevation of a mountain range is modeled by the function $E(x,y) = 1000 - 0.01x^2 - 0.02y^2$, where x and y represent the coordinates on a map. Draw the contour lines for $E(x,y) = 900$, $E(x,y) = 800$, and $E(x,y) = 700$. K5 (15)
- 5) Build a Python program that uses Matplotlib to create a line plot after reading time-series data from a file. Add grid lines and date labels to personalize the plot. K6 (12)