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End Semester Examination, December 2024
OPEN ELECTIVE- III Semester
Data Analysis and Visualization (OEC037)

Time: 2.5 hrs.

Max Marks: **50**

Note: *All Questions are compulsory. Marks are indicated against each question.*

PART-A

Q.1 Attempt any five questions:

- | | |
|---|-------------|
| (a) Define data analysis and explain its importance. | [CO-2] [L1] |
| (b) Differentiate between qualitative and quantitative data with examples. | [CO-1] [L1] |
| (c) What are data cleaning and preprocessing? Provide one example. | [CO-1] [L1] |
| (d) Explain the role of tools such as Python or Excel in data analysis. | [CO-2] [L1] |
| (e) What are the advantages of using descriptive statistics in data analysis? | [CO-1] [L1] |
| (f) Describe any two types of visualizations and their use cases. | [CO-1] [L1] |
| (g) Why is data validation important in the analysis process? | [CO-1] [L1] |

2 × 5 = 10 Marks

PART-B

Q.2 Attempt any one of the following:

- (a) Explain the process of handling missing data and outliers with examples. [CO-2] [L2] (10)

OR

- (b) Perform a basic analysis using pivot tables and summarize the insights. [CO-2] [L2] (10)

Q.3 Attempt any one of the following:

- (a) Explain the importance of histograms and scatter plots in identifying patterns in data. [CO-3] [L3] (10)

OR

- (b) Discuss how to interpret trends and outliers using a bar chart. [CO-3] [L3] (10)

Q.4 Attempt any one of the following:

- (a) Describe a case study where data analysis was crucial in solving a real-world problem. [CO-4] [L4] (10)

OR

- (b) How would you create and present a comprehensive data analysis report? Provide a step-by-step approach. **[CO-4] [L4] (10)**

Q.5 *Attempt any one of the following:*

- (a)** Discuss the limitations of a specific data analysis tool you have used. **[CO-5] [L5] (10)**

OR

- (b)** Evaluate the strengths and weaknesses of two visualization tools. **[CO-5] [L5] (10)**