

Unit 5 (2 mark)

1. Elaborate data visualization

Data visualization is the graphical representation of data using charts, graphs, and plots to identify patterns, trends, and insights clearly and efficiently.

2. Examine how annotations can enhance or mislead the interpretation of a plot.

Annotations enhance interpretation by highlighting key points, but they can mislead if biased, excessive, or placed to exaggerate or hide trends.

3. Name any four types of data visualizations.

- * Bar chart
- * Line chart
- * Pie chart
- * Scatter plot

4. Define the stages of data visualization.

- * Data collection
- * Data processing/cleaning
- * Visualization design
- * Interpretation and communication

5. List three commonly used data visualization tools in Python.

- * Matplotlib
- * Seaborn
- * Plotly

6. Describe the different types of data that can be visualized.

- * Categorical data
- * Numerical data
- * Time-series data
- * Geospatial data

7. Compare static and interactive data visualizations in terms of user experience.

Static visualizations are fixed and simple to interpret, while interactive visualizations allow user interaction such as zooming, filtering, and hovering for deeper exploration.

8. Discuss the role of annotations in enhancing a plot's readability.

Annotations improve readability by explaining trends, labeling important values, and guiding the viewer's attention to key insights.

9. Outline Basemap used for in Python.

Basemap is a Matplotlib toolkit used for plotting 2D maps, geographic data, and spatial visualizations such as country boundaries and projections.

10. Explain the importance of using appropriate color and labeling in data visualizations.

Proper color usage and clear labels improve clarity, prevent confusion, enhance accessibility, and help viewers accurately understand the data.