

## 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.