**BBA-DA&AI**

**IIth Sem / 1 YEAR:**

**Introduction to Python for Data Analysis**

**Some Important Guidelines for the Question Bank Setter:**

1. **Question bank must cover:Course (subject) Learning Outcomes (CLOs) and bloom's taxonomy (L1 : Remember, L2 : Understand, L3 : Apply, L4 : Analyse) details in this regard are attached with the mail.**
2. **The question bank should be prepared in the given format would also be attached.**
3. Each questionand parts of the questions should be written in clear language. Also break the questions relatively in shorter sentences if they contain brief information.
4. **Repetition of a question is not allowed.**
5. The file should be sent in MS-Word format.
6. The font size of the content should be Arial (font size 12) for English &KrutiDev 010 (font size 14) for Hindi.
7. **Wherever the question papers have been prepared in both Hindi and English languages, the Hindi version of the question should be written immediately after English version of each question.**
8. **In case of MBA Course, Section-C must contain Case studies (one case study per unit or numerical type questions as per the format).**
9. If the syllabus contains more than 5 units or less than 5 units then update the format accordingly.
10. **A question bank moderation committee will be formed by the Dean of the concerned college under the supervision of the concerned department HOD. Committee will check & ensure that the question bank is prepared according to the guidelines.**

**SECTION-A (Very Short Answer Type Questions)**

**UNIT-I**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
| **a)** | What is the file extension for a Python file? | **CO1** | **L1** |
| **b)** | Name one popular IDE used for Python development. | **CO3** | **L2** |
| **c)** | How do you start a comment in Python? | **CO1** | **L1** |
| **d)** | What is the keyword to return a value from a function? | **CO3** | **L2** |
| **e)** | Write a logical operator used in Python. | **CO3** | **L1** |
| **f)** | What keyword is used for a conditional check? | **CO3** | **L2** |
| **g)** | What is the keyword to return a value from a function? | **CO1** | **L1** |
| **h)** | What keyword is used for a conditional check? | **CO1** | **L2** |
| **i)** | What is the result of 10 % 3? | **CO1** | **L1** |
| **j)** | What do we call a value passed into a function? | **CO3** | **L2** |

**UNIT-II**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
| **a)** | Which command is used to install external Python libraries? | **CO1** | **L1** |
| **b)** | Write the import statement for NumPy. | **CO3** | **L2** |
| **c)** | What function creates a NumPy array? | **CO1** | **L1** |
| **d)** | How do you find the shape of a NumPy array? | **CO1** | **L2** |
| **e)** | What is the output type of np.array([1, 2, 3])? | **CO1** | **L1** |
| **f)** | What is the basic data structure in Pandas for 1D data? | **CO1** | **L2** |
| **g)** | What is the default axis for df.sum() in Pandas? | **CO3** | **L1** |
| **h)** | What function is used to export a DataFrame to Excel? | **CO3** | **L2** |
| **i)** | How do you check for missing values in a DataFrame? | **CO1** | **L1** |
| **j)** | Which function is used to group data by a column? | **CO1** | **L2** |

**UNIT-III**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
| **a)** | Name two popular Python libraries for data visualization. | **CO1** | **L1** |
| **b)** | Which function in Matplotlib is used to plot a line graph? | **CO3** | **L2** |
| **c)** | How do you set the title of a Matplotlib plot? | **CO1** | **L1** |
| **d)** | Which Seaborn function is used for box plots? | **CO1** | **L2** |
| **e)** | Which function displays pairwise relationships in Seaborn? | **CO1** | **L1** |
| **f)** | Name one Python library used for interactive visualizations. | **CO1** | **L2** |
| **g)** | What command is used to install Seaborn? | **CO1** | **L1** |
| **h)** | What function from Plotly is used to create an interactive line chart? | **CO1** | **L2** |
| **i)** | Which function is used to create a scatter plot? | **CO1** | **L1** |
| **j)** | How do you apply a theme/style in Seaborn? | **CO3** | **L2** |

**UNIT-IV**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
| **a)** | What does EDA stand for in data analysis? | **CO2** | **L1** |
| **b)** | Name one goal of EDA. | **CO4** | **L2** |
| **c)** | What is the average of a dataset called? | **CO2** | **L1** |
| **d)** | Which measure of central tendency is not affected by outliers? | **CO2** | **L2** |
| **e)** | How is range calculated? | **CO2** | **L1** |
| **f)** | What type of plot is used to show data distribution? | **CO4** | **L2** |
| **g)** | What type of chart is used to show correlation between variables? | **CO4** | **L1** |
| **h)** | What is normalization in the context of data preprocessing? | **CO4** | **L2** |
| **i)** | Name one method of scaling features. | **CO2** | **L1** |
| **j)** | What is the goal of feature engineering? | **CO4** | **L2** |

**UNIT-V**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
| **a)** | What keyword is used to define a class in Python? | **CO1** | **L1** |
| **b)** | What do we call an instance of a class? | **CO1** | **L2** |
| **c)** | What are variables inside a class called? | **CO1** | **L1** |
| **d)** | How do you access an object's attribute? | **CO1** | **L2** |
| **e)** | What is the syntax to inherit from a base class? | **CO1** | **L1** |
| **f)** | What is method overriding in OOP? | **CO1** | **L2** |
| **g)** | Does Python support function overloading natively? | **CO1** | **L1** |
| **h)** | How do you indicate a private variable in Python? | **CO1** | **L2** |
| **i)** | What function is used to print output on the screen? | **CO1** | **L1** |
| **j)** | Which function loads CSV data using Pandas? | **CO1** | **L2** |

**SECTION-B (Short Answer Type Questions)**

**UNIT-I**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
| **a)** | What is Python, and why is it widely used in programming? | **CO1** | **L1** |
| **b)** | Name two popular IDEs used for writing Python code. | **CO3** | **L2** |
| **c)** | List four basic data types in Python. | **CO1** | **L4** |
| **d)** | Declare a variable name and assign it the value "Alice". | **CO2** | **L2** |
| **e)** | Write a Python expression that adds 5 and 10. | **CO3** | **L2** |
| **f)** | Write a simple if-else statement to check if a number is positive. | **CO2** | **L4** |
| **g)** | How do you define a function in Python? | **CO1** | **L3** |
| **h)** | Write a function that takes two numbers as input and returns their sum. | **CO3** | **L2** |
| **i)** | What is the difference between a for loop and a while loop? | **CO3** | **L1** |
| **j)** | What is the purpose of the elif keyword? | **CO6** | **L5** |

**UNIT-II**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
| **a)** | What is the command to install the Pandas library using pip? | **CO3** | **L1** |
| **b)** | Write the Python statement to import the NumPy library as np. | **CO1** | **L3** |
| **c)** | Write a NumPy expression to find the mean of an array arr. | **CO3** | **L1** |
| **d)** | Write the code to load a CSV file named "data.csv" using Pandas. | **CO3** | **L2** |
| **e)** | What is the difference between a Series and a DataFrame in Pandas? | **CO4** | **L3** |
| **f)** | Write a Pandas command to export a DataFrame df to a CSV file named "output.csv". | **CO1** | **L2** |
| **g)** | Write a Pandas command to show the first five rows of a DataFrame df. | **CO2** | **L1** |
| **h)** | What method is used to remove rows with missing data? | **CO1** | **L2** |
| **i)** | Write the code to select the first 3 rows and first 2 columns from a DataFrame df. | **CO2** | **L1** |
| **j)** | What does groupby() do in Pandas? | **CO3** | **L4** |

**UNIT-III**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
| **a)** | Why is Seaborn considered an enhancement over Matplotlib? | **CO1** | **L4** |
| **b)** | What is the command to install Matplotlib using pip | **CO1** | **L2** |
| **c)** | How do you set the title of a plot in Matplotlib? | **CO1** | **L1** |
| **d)** | How can you label the x-axis and y-axis in a Matplotlib plot? | **CO3** | **L2** |
| **e)** | What type of plot is used to show data distribution and variability, similar to a violin? | **CO1** | **L1** |
| **f)** | Write a command to create an interactive scatter plot using Plotly Express. | **CO1** | **L4** |
| **g)** | What is the module in Plotly used for simple and quick plotting? | **CO3** | **L1** |
| **h)** | How do you change the color palette in Seaborn? | **CO1** | **L2** |
| **i)** | What is the primary purpose of a box plot? | **CO1** | **L4** |
| **j)** | Why would you choose an interactive plot over a static one? | **CO1** | **L2** |

**UNIT-IV**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
| **a)** | What is the main purpose of Exploratory Data Analysis (EDA)? | **CO3** | **L4** |
| **b)** | At which stage of the data science process is EDA typically performed? | **CO2** | **L1** |
| **c)** | Define mean and give a Pandas function to calculate it. | **CO3** | **L2** |
| **d)** | How does the median differ from the mean? | **CO3** | **L4** |
| **e)** | What does variance measure in a dataset? | **CO2** | **L2** |
| **f)** | What is the relationship between standard deviation and variance? | **CO4** | **L4** |
| **g)** | What plot helps detect outliers in a dataset? | **CO3** | **L1** |
| **h)** | How is Min-Max scaling different from standardization (Z-score normalization)? | **CO2** | **L3** |
| **i)** | Give an example of creating a new feature from existing data. | **CO4** | **L4** |
| **j)** | What is feature engineering, and why is it important in machine learning? | **CO3** | **L2** |

**UNIT-V**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
| **a)** | What is a class in Python, and how is it different from an object? | **CO3** | **L4** |
| **b)** | Define the \_\_init\_\_ method and its purpose in a class. | **CO2** | **L1** |
| **c)** | What are attributes in Python classes? | **CO5** | **L2** |
| **d)** | What is the difference between a class attribute and an instance attribute? | **CO3** | **L4** |
| **e)** | What is inheritance in object-oriented programming? | **CO2** | **L1** |
| **f)** | What is a child class? How does it relate to a parent class? | **CO5** | **L2** |
| **g)** | What is method overloading, and does Python support it | **CO3** | **L4** |
| **h)** | How can you simulate function overloading in Python? | **CO2** | **L2** |
| **i)** | What is method overriding in Python? | **CO5** | **L4** |
| **j)** | How do you override a method in a child class? | **CO5** | **L1** |

**SECTION-C [Descriptive Answer Type Questions / Case Study (for MBA COURSES only)]**

**UNIT-I**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
|  |  |  |  |
| **a)** | **What is Python, and what are its main features?** Discuss the key features of Python, such as its simplicity, readability, and support for both object-oriented and functional programming. Explain why Python is popular for web development, data science, machine learning, and automation tasks. | **CO3** | **L5** |
| **b)** | **How do you write and execute a Python program?** Discuss the basic steps to write Python code using an editor or IDE, save the file with a .py extension, and execute it using the Python interpreter from the command line or using IDE features. | **CO2** | **L1** |
| **c)** | **Explain the different data types in Python and provide examples.** Describe the four fundamental data types in Python: int, float, str, and bool. Provide examples of each, and explain their usage in Python code. | **CO5** | **L3** |
| **d)** | **What are variables in Python, and how are they assigned?** Explain the concept of variables and how they store values in Python. Discuss variable assignment, and mention that Python uses dynamic typing (e.g., x = 10 assigns an integer to x). | **CO3** | **L4** |
| **e)** | **What are the common arithmetic operators in Python, and how are they used?** List and describe the arithmetic operators in Python (+, -, \*, /, //, %, \*\*). Provide examples of their usage, such as calculating sums, differences, powers, or performing integer division. | **CO4** | **L2** |
| **f)** | **How do logical operators work in Python?** Describe the logical operators in Python (and, or, not) and how they are used in conditional expressions. Provide examples to demonstrate how logical operators evaluate expressions to True or False. | **CO4** | **L3** |
| **g)** | **How does the for loop work in Python?** Describe the structure of a for loop in Python, including how it iterates over a sequence like a list, range, or string. Provide an example of using a for loop to print the numbers from 1 to 5. | **CO5** | **L2** |
| **h)** | **What is the purpose of functions in Python, and how do you define one?** Explain that functions allow for modular and reusable code. Describe how to define a function using the def keyword and include a simple example of a function that takes two arguments and returns their sum. | **CO3** | **L2** |
| **i)** | **How do you pass arguments to a function, and what are keyword arguments?** Discuss how to pass arguments to a function (positional and keyword arguments). Explain what keyword arguments are and how they allow for clearer function calls. Provide an example using both types of arguments. | **CO5** | **L5** |
| **j)** | **What is the role of the return statement in Python functions?** Describe the return statement, which is used to send a value back from a function to the caller. Explain how functions can return a result and use this value in further expressions or logic. | **CO5** | **L5** |

**UNIT-II**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
|  |  |  |  |
| **a)** | **What is the purpose of using NumPy and Pandas in Python? Explain their key differences.** Discuss the role of NumPy and Pandas in data manipulation and analysis. Describe how NumPy provides support for arrays and matrices, while Pandas focuses on data structures like Series and DataFrames for handling tabular data. | **CO3** | **L1** |
| **b)** | **How do you create a NumPy array from a list or a tuple? Provide examples.** Describe how to create NumPy arrays using np.array(). Provide examples like arr = np.array([1, 2, 3]) and explain the benefits of using NumPy arrays over standard Python lists. | **CO2** | **L4** |
| **c)** | **Explain the concept of a NumPy matrix and how it differs from an array.** Discuss the difference between arrays and matrices in NumPy. Matrices are two-dimensional arrays with specific operations and properties. Example: matrix = np.matrix([[1, 2], [3, 4]]). | **CO5** | **L2** |
| **d)** | **How do you perform basic mathematical functions like mean, median, and standard deviation using NumPy?** Show how to use np.mean(), np.median(), and np.std() to calculate basic statistical measures for a NumPy array. | **CO4** | **L5** |
| **e)** | **What are Series and DataFrames in Pandas? Describe their key differences.** Explain that a Pandas Series is a one-dimensional labeled array, while a DataFrame is a two-dimensional table-like data structure with rows and columns. Provide examples of creating both. | **CO2** | **L2** |
| **f)** | **How can you read data from a CSV file into a Pandas DataFrame?** Demonstrate how to use pd.read\_csv() to import data from a CSV file into a DataFrame, and mention common options (e.g., header, index\_col, dtype). | **CO5** | **L3** |
| **g)** | **How do you inspect the first few rows and summary statistics of a DataFrame in Pandas?** Explain how to use df.head() to view the first 5 rows and df.describe() to get summary statistics (e.g., mean, std, min, max) for numeric columns. | **CO3** | **L4** |
| **h)** | **How can you clean data by dropping or filling missing values in Pandas?** Explain how to use df.dropna() to remove rows with missing values and df.fillna() to replace missing values with a specified value or method. | **CO4** | **L4** |
| **i)** | **How can you index and slice a Pandas DataFrame to select specific rows and columns?**  Discuss how to use df['column\_name'] to select a single column and df.loc[] or df.iloc[] for row/column slicing. Provide examples of slicing the first 3 rows or selecting specific columns. | **CO5** | **L3** |
| **j)** | **Explain how to merge multiple DataFrames in Pandas using merge() and concat().** Discuss how to combine DataFrames using merge() (for database-style joins) and concat() (for concatenating along rows or columns). | **CO3** | **L5** |

**UNIT-III**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
|  |  |  |  |
| **a)** | **What is data visualization, and why is it important in data analysis?** Explain the role of data visualization in understanding complex datasets. Discuss how visualizations help to identify patterns, trends, and outliers, making it easier for analysts to draw conclusions. | **CO3** | **L3** |
| **b)** | **What are the primary differences between Matplotlib and Seaborn in terms of functionality and aesthetics?**  Describe how Matplotlib is a low-level library for creating static plots with full control over every aspect of the plot, while Seaborn is built on top of Matplotlib and offers higher-level interfaces for easier, more attractive statistical graphics. | **CO2** | **L4** |
| **c)** | **How does a violin plot differ from a box plot, and when should you use it?** Discuss how a violin plot combines aspects of a box plot and a kernel density plot to show the distribution of the data, providing more information about the data's density. Mention situations where it’s useful for visualizing distributions in a more detailed way. | **CO5** | **L3** |
| **d)** | **What is a pair plot in Seaborn, and when would you use it?** Explain the use of sns.pairplot() to visualize pairwise relationships between multiple variables in a dataset, especially in the context of exploratory data analysis. It's useful for identifying correlations and patterns between variables. | **CO1** | **L4** |
| **e)** |  **What are the advantages of interactive visualizations, and how does Plotly support them?** Explain the interactivity features offered by Plotly, such as zooming, hovering, and dynamic updates, which make it easier for users to explore data in more detail compared to static plots.   | **CO4** | **L5** |
| **f)** | **What are some customization options available in Plotly to improve the appearance of plots?** Discuss how Plotly allows customization through arguments such as layout, title, labels, and hover\_data. Provide examples of customizing axes, changing colors, and modifying plot titles. | **CO3** | **L3** |
| **g)** | **How does Plotly compare to Matplotlib and Seaborn in terms of interactive plotting?** Compare Plotly with Matplotlib and Seaborn in terms of static vs. interactive plots. Discuss Plotly's ease of use for creating complex interactive visualizations, whereas Matplotlib and Seaborn focus more on static visualizations. | **CO2** | **L4** |
| **h)** | **What is the role of color palettes in Seaborn and Plotly, and how can they be customized?** Explain the importance of color palettes in visualizations for readability and insights. Discuss how Seaborn and Plotly allow customization of colors through predefined palettes or by setting specific color schemes for better visualization. | **CO5** | **L5** |
| **i)** | **What is the significance of adding interactive elements like sliders, buttons, or dropdowns in Plotly visualizations?** Discuss how Plotly's interactivity features (e.g., sliders, dropdown menus) can enhance data exploration by allowing users to dynamically adjust parameters, select subsets of data, and explore trends over time. | **CO4** | **L3** |
| **j)** | What lessons can other industries (like finance or education) learn from MedInsight’s application of design principles? | **CO2** | **L5** |

**UNIT-IV**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
|  |  |  |  |
| **a)** | **What is Exploratory Data Analysis (EDA), and why is it important in data analysis?** Explain the purpose of EDA in understanding a dataset before applying machine learning algorithms or drawing conclusions. Discuss how EDA helps to identify patterns, detect outliers, and understand the structure of the data. | **CO4** | **L5** |
| **b)** | **What are the main goals of performing EDA on a dataset?** Discuss the key goals of EDA, such as summarizing the dataset's key characteristics, detecting anomalies, testing assumptions, and finding relationships between variables. | **CO3** | **L3** |
| **c)** | **What are measures of central tendency, and how are they used in EDA?** Explain the three common measures of central tendency: Mean, Median, and Mode. Discuss how each measure provides insight into the "center" of a dataset and when each measure is more appropriate (e.g., mean for symmetric distributions, median for skewed distributions). | **CO2** | **L2** |
| **d)** | **How do you calculate and interpret variance, standard deviation, and range of a dataset?** Provide formulas for calculating variance (Var = (sum of (xi - mean)^2) / N), standard deviation (std = sqrt(variance)), and range (range = max(x) - min(x)). Show examples to explain how these measures help to describe the distribution of data. | **CO5** | **L4** |
| **e)** | **What is the role of histograms in EDA, and how are they used to visualize the distribution of data?** Explain that histograms are used to visualize the frequency distribution of a continuous variable. Discuss how bins are created and how histograms can reveal the shape of the distribution (e.g., normal, skewed, uniform). | **CO4** | **L5** |
| **f)** | **How do correlation heatmaps assist in understanding relationships between variables?** Explain how correlation heatmaps are used to visualize the strength and direction of relationships between multiple numerical variables. Correlations close to 1 or -1 indicate strong relationships, while correlations near 0 suggest weak or no relationships. | **CO3** | **L4** |
| **g)** | **What is feature engineering, and why is it important for improving model performance?** Explain that feature engineering involves transforming raw data into meaningful features that improve the performance of machine learning algorithms. Discuss the importance of creating new features that capture more relevant information and reduce dimensionality. | **CO4** | **L5** |
| **h)** | **What is the difference between scaling and normalization, and why are they important for certain machine learning algorithms?** Explain that scaling adjusts the range of features to a standard range (e.g., 0 to 1), and normalization makes the data follow a standard normal distribution. Discuss when to use each technique and the impact on algorithms like k-nearest neighbors and gradient descent. | **CO3** | **L3** |
| **i)** | **What is one-hot encoding, and how is it used in feature engineering for categorical variables?** Explain how one-hot encoding transforms categorical variables into binary (0 or 1) columns, allowing machine learning algorithms to interpret categorical data. Provide an example of how to implement it in pandas. | **CO2** | **L5** |
| **j)** | **How can you deal with missing data in feature engineering, and what strategies can be used to handle it?** Discuss different methods of handling missing data, such as filling missing values with the mean/median, forward filling, or dropping rows or columns with too many missing values. Explain how this can be critical for ensuring the model's accuracy. | **CO5** | **L3** |

**UNIT-V**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Question** | **CO** | **Bloom's Taxonomy** |
|  |  |  |  |
| **a)** | **What are classes and objects in Python?** Define a class as a blueprint for creating objects (instances). Explain that an object is an instance of a class, containing the attributes and methods defined in the class. Provide an example of creating a class and instantiating an object. | **CO4** | **L5** |
| **b)** | **What are attributes in Python classes, and how do they differ from methods?** Discuss attributes as variables that are associated with a class or an object, and methods as functions that are defined within a class. Provide an example of how attributes are defined and accessed in a class. | **CO3** | **L3** |
| **c)** | **What is inheritance in Python, and how does it work?** Define inheritance as the ability of a class (child class) to inherit attributes and methods from another class (parent class). Explain how this promotes code reuse and the creation of more specialized classes. Provide an example. | **CO2** | **L2** |
| **d)** | **What is method overriding in inheritance, and how is it used?** Explain method overriding as the process where a child class provides a specific implementation of a method that is already defined in its parent class. Show an example where the child class method overrides the parent class method. | **CO4** | **L4** |
| **e)** | **What is data hiding in Python, and why is it important?**  Define data hiding as the practice of restricting access to certain attributes and methods of a class to prevent direct manipulation from outside the class. Discuss how data hiding is achieved using private or protected access modifiers. | **CO3** | **L5** |
| **f)** | **How do you open and close files in Python?** Explain how to open a file using the open() function and how to close it using the close() method. Provide examples of opening a file in different modes (e.g., reading, writing). | **CO5** | **L3** |
| **g)** | **How do you read data from a file in Python?** Explain how to read from a file using methods like read(), readline(), and readlines(). Provide examples of reading the entire content of a file and reading line by line. | **CO4** | **L2** |
| **h)** | **What are functions in Python, and why are they important?** Explain that functions are reusable blocks of code designed to perform a specific task. Discuss how functions help in improving code modularity and maintainability. Provide an example of a simple function. | **CO3** | **L4** |
| **i)** | **How do you load data into a Pandas DataFrame?** Discuss loading data from various sources like CSV, Excel, and JSON using Pandas' read\_csv(), read\_excel(), and read\_json() functions. Provide an example of loading data from a CSV file. | **CO4** | **L5** |
| **j)** | **What are some common operations you can perform with Numpy arrays?** Discuss various operations that can be performed on Numpy arrays, such as element-wise arithmetic, reshaping, indexing, and slicing. Provide examples. | **CO5** | **L3** |