

**Pandas Exam Paper 1 (Total 30 Questions - 2 Marks Each)**



**Section A: Data Creation and Importing (7 Questions)**

1. **Creating a DataFrame**   
Create a DataFrame using pd.DataFrame() with columns: 'Name', 'Age', and 'City' and values for 3 individuals.

**Answer: data={**

**"Name":["Alice","Bob","Charlie"],**

**"Age":[55,43,28],**

**"City":["Delhi","Mumbai","Hyderabad"]**

**}**

**df=pd.DataFrame(data)**

**print(df)**

2. **Reading CSV File**   
 Write the command to read a CSV file named data.csv into a DataFrame.

**Answer:df=pd.read\_csv(‘data.csv’)**

3. **Reading Excel File**   
 How would you load data from an Excel file called data.xlsx into a DataFrame?

**Answer:df=pd.read\_excel(‘data.xlsx’)**

4. **Reading JSON File**   
 Load a JSON file named data.json into a DataFrame.

**Answer:df=pd.read\_json(‘data.json’)**

5. **Reading HTML Table**   
 Parse an HTML file containing a table and return it as a DataFrame.

**Answer:**

df=pd.read\_html(‘test.html’)

first\_table=df[0]

6. **Creating DataFrame from a Dictionary**   
Create a DataFrame using a dictionary with two columns: 'Product' and 'Price', containing 3 items.

**Answer:** **data={**

**"Product":["Car","Bike","Auto"],**

**"Price":[55,43,28]**

**}**

**df=pd.DataFrame(data)**

**print(df)**

7. **Exploring DataFrame from CSV**   
After loading a CSV into a DataFrame, what command would you use to see the first 5 rows?

**Answer:df=pd.read\_csv(“data.csv”) print(df.head())**



**Section B: Data Inspection (7 Questions)**

8. **Viewing First Few Rows**   
 Use the appropriate command to display the first 10 rows of a DataFrame df .

**Answer:df.head(10)**

9. **Viewing Last Few Rows**   
 Show the last 3 rows of the DataFrame df .

**Answer:df.tail(3)**

10. **Checking DataFrame Information**   
Which command provides concise information about the DataFrame, such as data types and memory usage?

**Answer:df.info()**

11. **Descriptive Statistics**   
 How do you generate descriptive statistics like mean, median, and standard deviation for

numeric columns in a DataFrame?   
**Answer:df.describe()**

12. **Checking Data Types**   
 What command returns the data types of each column in the DataFrame?

**Answer:df.dtypes**

13. **Checking DataFrame Shape**   
 How do you find the number of rows and columns in the DataFrame?

**Answer:df.shape()**

14. **DataFrame Summary**   
 Explain what df.info() does and what kind of information it provides.

**Answer: Gives shape, dtypes and non null values**



**Section C: Indexing and Selecting Data (8 Questions)**

15. **Setting an Index**   
 Set the 'ID' column as the index for the DataFrame df .

**Answer:df.set\_index(‘ID’)**

16. **Resetting an Index**   
 How do you reset the index of the DataFrame and return it to the default integer index?

**Answer:**

df.reset\_index()

17. **Selecting Data by Position**   
 Retrieve the third row of the DataFrame using iloc[] .

**Answer:df.iloc[2]**

18. **Selecting Data by Label**   
 Use loc[] to access all rows where the 'Age' column is greater than 30.

**Answer:** **print(df.loc[df['Age'] > 30])**

19. **Querying the DataFrame**   
 Use query() to select rows where the 'Salary' is greater than 50000.

**Answer:df.query(‘Salary > 50000’)**

20. **Sorting Values**   
 Sort the DataFrame df by the 'Price' column in ascending order.

**Answer:** **print(df.sort\_values(by='Price'))**

21. **Selecting Top N Rows by Value**   
 Select the top 3 rows with the highest values in the 'Marks' column using nlargest() .

**Answer:** **print(df.nlargest(3,"Marks"))**

22. **Selecting Smallest N Rows by Value**   
 Use nsmallest() to return the bottom 2 rows based on the 'Age' column.

**Answer:print(df.nsmallest(2,”Age”)**

**Section D: Data Cleaning (8 Questions)**

23. **Detecting Missing Values**   
 Write the command to detect missing values in the DataFrame df .

**Answer:df.isnull.sum()**

24. **Removing Missing Values**   
 Remove rows with missing values in the DataFrame df .

**Answer:df.dropna()**

25. **Filling Missing Values**   
 Fill missing values in the 'Salary' column with the mean salary value.

**Answer:** **fill = {**

**'Salary':df['Salary'].mean()**

**}**

**df.fillna(fill)**

26. **Dropping Duplicate Rows**   
 How do you remove duplicate rows from the DataFrame?

**Answer:df.drop\_duplicates()**

27. **Replacing Values**   
 Replace all occurrences of the value 'M' in the 'Gender' column with 'Male'.

**Answer:** **df['Gender'].replace("M","Male",inplace=True)**

28. **Converting Data Types**   
 Convert the 'Age' column to integers using astype() .

**Answer:**

df['Age'].astype('int64')

29. **Handling Missing Values in Specific Column**   
 Remove rows where the 'Age' column contains missing values.

**Answer:df.dropna(subset=[‘Age’)**

30. **Filling Missing Values Using Forward Fill**   
 Use the forward fill method to fill missing values in the DataFrame df .

**Answer: fill\_missing={**

**‘A’:df[‘A’].mean(),**

**‘B’:df[‘B’].max()**

**}**

**df.fillna(fill\_missing)**

