

**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: dict1 = {**

“Names”: [“Jack”,”John”,”Nick”],

“Age”: [22,25,30],

“City” : [“Hyderabad”,”Chennai”,”Delhi”]

}

df = pd.DataFrame(data=dict1)

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()**

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

**Answer: dict = {**

“Product” = [“Car”,”laptop”,”IPhone”],

“Price” = [8L,1L,1.5L]

}

df = df.DataFrame(data=dict )

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.head(5)**



**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.dtype()**

df.memoryusage()

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.dtype()**

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: It gives the information of dataframe that contains number of rows ,columns,datatype in every column**



**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[:3]**

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

**Answer: 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: 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: 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: 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()**

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: df.fillna(df[‘Salary’].mean())**

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

**Answer: df.duplicates.duplicated()**

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

**Answer:**

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

**Answer:** df[‘Age’].astype(np.int64)

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

**Answer: df.dropna([‘Age’])**

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

**Answer: df.fil()**

