

## **Q1- What is data cleaning, and why is it important in data analysis?**

**i What are the potential consequences of analyzing unclean or messy data?**

**ii Explain the common steps involved in cleaning and organizing data.**

**Ans** - Data cleaning means removing errors, duplicates, missing values, and inconsistent formatting from a dataset.

### **Importance:**

- a- Improves accuracy of analysis
- b- Removes wrong or misleading information
- c- Makes the dataset consistent and easy to read
- d- Helps in better decision-making
- e- Avoids incorrect result

### **i- consequences of analyzing unclean data**

#### **If data is not clean:**

- a- Results become inaccurate
- b- Wrong business decisions
- c- Duplicate entries cause confusion
- e-Missing values distort trends
- f- Wastes time during analysis

### **ii- Common steps in cleaning & organizing data**

- a-Import data properly
- b- Remove duplicate records
- c- Handle missing values
- d- Correct formatting (numbers, dates, text)

- e- Remove extra spaces using TRIM
  - f- Standardize text (upper/lower/proper case)
  - g- Apply data validation to restrict wrong inputs
  - h- Sort and filter the data
  - i- Check formulas and consistency
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**Q2** - How would you sort the following dataset first by "Department" (A-Z) and then by "Salary" (Largest to Smallest)? Write a step-by-step approach Select the entire dataset

**Ans** -Select the whole table

**step 1:** Go to Data → Sort

**step 2:** First sort by:

Column: Department

Order: A to Z

**step 3:** Click Add Level

**step 4:** Then sort by:

Column: Salary

Order: Largest to Smallest

**step 5 :** Click OK

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**Q3-** Explain the use of text functions such as TRIM , LEFT, RIGHT, MID, and CONCAT in data cleaning.

**Ans-**

TRIM(text) → Removes extra spaces  
e.g.=trim("hello world),  
result- hello world

1.

LEFT(text, n) → Extracts characters from the left

e.g. =left("excel",2),

result- ex

2.

RIGHT(text, n) → Extracts characters from the right

e.g. =right("excel",2)

result- el

3.

MID(text, start, n) → Extracts characters from the middle

e.g. =mid("excel",2,3),

result- xce

4.

CONCAT(text1, text2, ...) → Combines multiple text strings

e.g. =concat("good", " ", "morning"),

result- good morning

5.

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**Q4-** What is the role of date functions like TODAY in managing datasets?

**Ans-**

Role of TODAY() in dataset management

**a** Returns the current date

**b** Helpful for calculating deadlines, ages, due dates, and remaining days

**c** Automatically updates every day

Example: =TODAY() → 2025-11-11

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=A1 - TODAY() → Days left until the date in A1.

**Q5-** Apply Data Validation to restrict Quantity values to only whole numbers between 1 and 10.

- i Configure an input message that appears when a user selects a cell in the "Quantity" column explaining: "Please enter a whole number between 1 and 10."
- ii Set up an error alert message that triggers if the user enters a number less than 1 or greater than 10, showing: "Invalid input! The quantity must be a whole number between 1 and 10."

**Answer-** steps involved

- 1.Select the “Quantity” column.
- 2.Go to Data → Data Validation.
- 3.In Allow, choose Whole Number.
- 4.Set Minimum = 1 and Maximum = 10.
- 5.Click Input Message tab:
  - Title: Quantity Entry
  - Message: Please enter a whole number between 1 and 10.
- 6.Click Error Alert tab:
  - Title: Invalid Input
  - Message: The quantity must be between 1 and 10.

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**Q6 -** Understand and apply fundamental text functions like LEFT, RIGHT, MID, and LEN.

- i Extract the first 5 characters from the string "ExcelTipsAreGreat" using the LEFT function.

**ii** Extract the last 4 characters from "DataAnalysis.xlsx" using the RIGHT function.

**iii** Extract the substring "Tips" from "ExcelTipsAreGreat" using the MID function.

**iii** Count the total number of characters in the string "Hello World!" using the LEN function.

**iv** Create a formula to extract the middle 6 characters from "12345-67890-ABCDE".

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**Ans-**

First 5 characters using LEFT

=LEFT("ExcelTipsAreGreat", 5)

Result: Excel

1.

Last 4 characters using RIGHT

=RIGHT("DataAnalysis.xlsx", 4)

Result: .xlsx

2.

Extract "Tips" using MID

=MID("ExcelTipsAreGreat", 6, 4)

Result: Tips

3.

Count characters using LEN

=LEN("Hello World!")

Result: 12

4.

Extract middle 6 characters from "12345-67890-ABCDE"

=MID("12345-67890-ABCDE", 7, 6)

Result: 67890-

5.

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**Q7-** Understand how to combine text using CONCAT, TEXTJOIN, and the & operator.

i> Use CONCAT to combine "Hello" and "World" with a space in between.

ii> Combine "Apple", "Banana", and "Cherry" into a single string separated by commas using TEXTJOIN.

iii> Use the & operator to create the string "2025: Excel Functions" by combining "2025", ":", and "Excel Functions".

iv> Create a comma-separated list from the range A1:A5 using TEXTJOIN

v> Combine first names in column A with last names in column B to create full names in column C

### **Answer**

a. Combine "Hello" and "World" =CONCAT("Hello", " ", "World") ,

Result- Hello World

b. Combine Apple, Banana, Cherry (with commas)

=TEXTJOIN(", ", TRUE, "Apple", "Banana", "Cherry"),

Result- Apple,Banana,Cherry

c. Combine using & ="2025" & ":" & "Excel Functions" ,

Result- 2025: Excel Functions

d. Comma-separated list from A1:A5 =TEXTJOIN(", ", TRUE, A1:A5) ,

Result- Apple,Banana,Cherry,...

e. Combine first and last names =A1 & " " & B1 ,

Result- John Smith

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### **Q8- Understanding TODAY() and NOW()**

a. What is the difference between TODAY() and NOW() in Excel? Provide an example of when you would use each function.

- b. If cell A1 contains the date 2025-06-10, write a formula using TODAY() to determine how many days are left until that date
- c. Write an Excel formula using NOW() to display the current date and time in the format MM/DD/YYYY HH:MM AM/PM.
- d. If a cell contains =TODAY(), what will happen when the worksheet is reopened the next day? Explain
- e. You want to store a static date (today's date) in a cell without it changing every day. What keyboard shortcut should you use?

### **Answer**

TODAY() and NOW()

today() -Returns current date only ,e.g. 2025-11-11

NOW() -Returns date and time ,e.g. 2025-11-11 12:30 PM

#### **a.Difference:**

- TODAY() → Only date
  - NOW() → Date + Time
- Use TODAY() -for days left;  
NOW()- for timestamps

#### **b.Days left until 2025-06-10:**

=A1 - TODAY()

#### **c.Show date & time:**

=TEXT(NOW(),"MM/DD/YYYY HH:MM AM/PM")

#### **d.When reopened next day:**

→ =TODAY() updates automatically to new date.

- e.**To enter static date (not changing):**  
→ Press Ctrl + ;