Excel Interview Questions and Answers

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10 lakh rows and 16k columns

Difference Between a Worksheet and a Workbook in Excel

Feature	Worksheet	Workbook
Definition	A worksheet is a single spreadsheet within Excel where you enter and manipulate data.	A workbook is an Excel file that contains one or more worksheets.
Structure	Consists of rows, columns, and cells.	Contains multiple worksheets.
Navigation	Accessed by clicking within the grid.	Switch between worksheets using the tabs at the bottom of the Excel window.

Key Components of the Excel Ribbon Menu

Tab	Key Features
Home	Basic formatting: font, alignment, number formatting, clipboard tools, and editing options.
Insert	Tools to insert tables, charts, pivot tables, pictures, and shapes.
Page Layout	Controls for themes, margins, page orientation, and printing settings.
Formulas	Contains functions, formula auditing, and named ranges.
Data	Tools for sorting, filtering, data validation, and importing/exporting data.
Review	Features for spell check, comments, and worksheet protection.
View	Options like zoom, freeze panes, split, and different worksheet views.

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What Is the Purpose of Excel Tables & How Do They Improve Data Analysis?

Excel Tables convert raw data into a well-organized, structured format, making data management and analysis more efficient and user-friendly.

✅ Benefits of Using Excel Tables

Feature	Description
Automatic Formatting & Sorting	Tables are automatically styled with headers, making data easier to read and sort.
Dynamic Ranges	Tables automatically expand to include new rows or columns when data is added.
Easier Formulas	Use column names instead of cell references (e.g., `=SUM(Table1[Sales])`).
Filtering & Slicers	Quickly filter or analyze data using built-in filters or interactive slicers.
Quick Totals	Instantly add total rows with shortcuts like Alt + = for summing values.

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How Do You Handle Errors in Excel Using `IFERROR` and `ISERROR`?

- **`IFERROR(value, alternate_value)`**
  Returns an alternate value if an error occurs in the formula.

- **`ISERROR(value)`**
  Returns `TRUE` if the value is an error; otherwise, returns `FALSE`.

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What's the difference between `IFERROR` and `IFNA`?

`IFERROR()` catches all types of errors (e.g., `#DIV/0!`, `#VALUE!`, `#N/A`, etc.), whereas **`IFNA()`** handles only the `#N/A` error.

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1. What is a cell in Excel?

Answer:
A **cell** in Excel is the **basic unit** where data is entered and stored. It is identified by a **column letter** and **row number** (e.g., A1, B2). Each cell can hold values like text, numbers, formulas, or dates.

Cells can contain:

- Text (like "Name")
- Numbers (like 100)
- Formulas (`=A1+B1`)
- Functions (`=SUM(A1:A5)`)

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2. What is the purpose of Conditional Formatting and how is it used in Excel?

Answer:

Conditional Formatting in Excel is a powerful feature that allows you to automatically apply formatting—like colors, icons, or data bars—to cells based on specific rules or conditions. It helps highlight important patterns, such as values above or below a threshold, duplicates, or trends. For example, I can highlight all sales greater than ₹10,000 in green, and those below ₹5,000 in red. This makes data easier to analyze at a glance, especially in dashboards and reports.

🎯 **Purpose of Conditional Formatting:**

- **Highlight key data** based on criteria (e.g., top performers, low sales).
- **Identify trends or patterns** using color scales or icon sets.
- **Spot duplicates**, blanks, or outliers instantly.
- **Make dashboards and reports more readable** and dynamic.

✅ **How to use Conditional Formatting:**

1. Select the range of cells you want to format.
2. Go to **Home** → **Conditional Formatting**.
3. Choose a rule type (e.g., Highlight Cell Rules, Top/Bottom Rules).
4. Enter the condition and choose a formatting style.
5. Click **OK** to apply.

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3. Explain the formula for MEDIAN, AVERAGE, VARIANCE, and STANDARD DEVIATION.

📌 Concept	🧮 Formula	📝 Explanation
Average (Mean)	`=AVERAGE(A1:A10)`	Calculates the average (sum ÷ count) of numbers in the range A1 to A10.
Median	`=MEDIAN(A1:A10)`	Returns the middle number in the range after sorting. If even count, returns the average of two middle values.
Variance (Sample)	`=VAR.S(A1:A10)`	Measures how much the values vary from the sample mean.
Variance (Population)	`=VAR.P(A1:A10)`	Measures variance assuming the range represents the whole population.
Standard Deviation (Sample)	`=STDEV.S(A1:A10)`	Measures the spread of numbers from the sample mean.
Standard Deviation (Population)	`=STDEV.P(A1:A10)`	Measures spread from the population mean. Lower SD means data is closer to the average.

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3. Difference between One-way and Two-way Sorting

One-way sorting organizes based on one criterion, like sorting names alphabetically. Two-way sorting enables hierarchical sorting, such as sorting first by department and then by employee name—helpful when analyzing grouped data.

Feature	One-way Sorting	Two-way Sorting
Number of Columns	1	2 or more
Sorting Priority	Only one level of sorting	Primary and secondary level sorting
How to Apply	Sort by one column	Use **Sort** → **Add Level** option
Use Case Example	Sort student list by marks	Sort students by class, then marks
Result	Sorted by a single key	Nested sorting (groups within groups)

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4. What is the purpose of equal to (=) in Excel?

Answer:
In Excel, the **equal to (=)** sign is used to **initiate a formula**. It tells Excel that what follows is not plain text or a number, but a **formula** to calculate.

Example:

- Typing `=2+2` returns `4`
- Typing `=A1 + B1` adds values from A1 and B1

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5. Difference Between RAND and RANDBETWEEN

Feature	`RAND()` Function	`RANDBETWEEN()` Function
Purpose	Generates a **random decimal number**	Generates a **random whole number**
Value Range	Between **0 and 1** (exclusive of 1)	Between the **two integers** you specify (inclusive)

Syntax	`=RAND()`	`=RANDBETWEEN(bottom, top)`
Example Output	`0.5328`, `0.8721`, etc.	`=RANDBETWEEN(10, 50)` → Possible outputs: `12`, `36`
Use Case	Simulations, probabilistic models, fractions	Lottery numbers, test data, random IDs
Updates on Refresh	Yes — generates new number when worksheet recalculates	Yes — values change on refresh

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6. Truth Table for AND and OR Gate

AND Gate

Returns TRUE **only if both inputs are TRUE**

A	B	A AND B
0	0	0
0	1	0
1	0	0
1	1	1

OR Gate

Returns TRUE **if at least one input is TRUE**

A	B	A OR B
0	0	0
0	1	1
1	0	1
1	1	1

In Excel:

- `=AND(A1=1, B1=1)`

- `=OR(A1=1, B1=1)`

`AND()` Function

- Returns **TRUE** only if **all conditions** are met.
- Returns **FALSE** if **any condition** fails.
- `=IF(AND(A1>=50, B1>=50), "Pass", "Fail")`

✅ **`OR()` Function**

- Returns **TRUE** if **at least one condition** is met.
- Returns **FALSE** only if **all conditions** fail.
- `=IF(OR(A1>=50, B1>=50), "Pass", "Fail")`

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7. Syntax of IF Condition

The **IF() function** performs a logical test. It returns a value if the test evaluates to true and another value if the test result is false. It returns the value depending on whether the condition is valid for the entire selected range.
syntax->
```
=IF(logical_test, value_if_true, value_if_false)
```

Example:

excel
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```
=IF(A1>=50, "Pass", "Fail")
```

- If A1 is 60 → Result: "Pass"
- If A1 is 45 → Result: "Fail"

A **Nested IF** uses **multiple IF functions inside one another** to check **multiple conditions** sequentially.

The function IF() can be nested when we have multiple conditions to meet. The FALSE value in the first IF function is replaced by another IF function to make a further test.

✅ **Syntax:**

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```
=IF(condition1, result1, IF(condition2, result2, IF(condition3, result3, ...)))
```

✅ **Example:**

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```
=IF(A1>=90, "A", IF(A1>=80, "B", IF(A1>=70, "C", "Fail")))
```

- If A1 = 85 → Returns: `"B"`
- If A1 = 60 → Returns: `"Fail"`

Feature	IF Function	Nested IF Function
Purpose	Checks a **single condition**	Checks **multiple conditions**
Complexity	Simple logic	More complex logic with multiple branches
Example Use Case	Pass/Fail logic	Grading system (A/B/C/Fail), Salary bands, etc.

Syntax	`=IF(A1>50, "Pass", "Fail")`	`=IF(A1>90, "A", IF(A1>80, "B", ...))`
Limitations	Only one decision	Can get confusing with too many levels

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8. Difference Between CONCATENATE Function and plus(&) Operator

Plus Operator (&) Syntax:

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```
=text1 & text2 & ...
```

✅ **Example:**

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```
="Hello" & " " & "World"
```

Feature	CONCATENATE	& Operator
Syntax	`=CONCATENATE(A1, " ", B1)`	`=A1 & " " & B1`
Use	Combines multiple strings or values	Same result with simpler syntax
Preferred in	Older Excel versions	Newer Excel versions (faster)

Feature	CONCATENATE	& Operator
Ease of Use	Slightly longer	Short and simple
Multiple Strings	Accepts comma-separated values	Joins using & symbol

New Excel Versions	Deprecated in favor of `TEXTJOIN` or `CONCAT`	Still widely supported
Handling separators	Needs manual addition (" ")	Also needs `" "` added manually

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9. Difference Between REPLACE and SUBSTITUTE

Function	REPLACE	SUBSTITUTE
Purpose	Replaces part of text **based on position**	Replaces **specific text**
Syntax	`=REPLACE(text, start_num, num_chars, new_text)`	`=SUBSTITUTE(text, old_text, new_text)`
Example	`=REPLACE("Snehal", 1, 3, "Des")` → "Deshal"	`=SUBSTITUTE("Snehal Snehal", "Snehal", "Desai")` → "Desai Desai"

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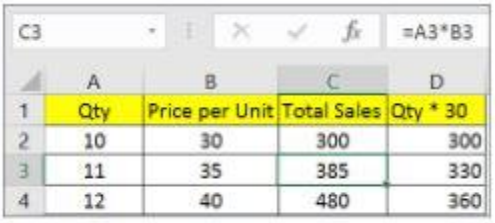
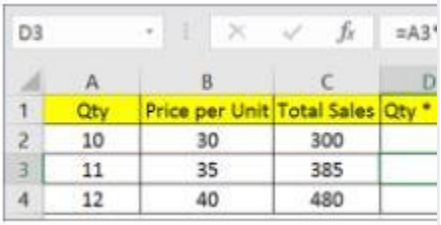
10. Difference Between Absolute and Relative References

Relative cell referencing	Absolute cell referencing
In Relative referencing, there is a change when copying a formula from one cell to another cell with respect to the destination. cells' address	Meanwhile, there is no change in Absolute cell referencing when a formula is

	copied, irrespective of the cell's destination.
This type of referencing is there by default. Relative cell referencing doesn't require a dollar sign in the formula.	If you don't want a change in the formula when it's copied across cells, then absolute referencing requires you to add a dollar sign before and after the column and row address.
	

Feature	Relative Reference	Absolute Reference
Syntax	`A1`	`$A$1`
Adjusts when copied?	Yes	No
Use Case	Repeating calculations across rows/columns	Fixed tax rate, constant value, lookup tables

Common Example	`=B1 + C1` becomes `=B2 + C2`	`=$B$1 + $C$1` remains unchanged

A **relative reference** changes when the formula is copied to another cell. It's the default behavior in Excel.

An **absolute reference** does **not change** when the formula is copied. It **locks** the cell using the dollar sign `$`.

Type	Reference Example	Behavior When Copied
Relative	`=A1 + B1`	Changes to `=A2 + B2` if copied down
Absolute	`=$A$1 + $B$1`	Remains same even when copied

Use Case:
Absolute references are used when you want to lock a cell (like a tax rate) and use it across multiple formulas without changing.

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11. Purpose of Locking Cells in Excel

Answer:
Locking cells is used to **prevent accidental editing** in sensitive cells (like formulas, headers).

Steps:

1. Select all cells → Right click → Format Cells → Protection → Check "Locked"
2. Then go to **Review** → **Protect Sheet**
3. Set a password (optional)

It helps in:

- Securing templates
- Preventing deletion of formulas

- Controlling what users can edit

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12. Difference Between VLOOKUP and HLOOKUP

Feature	VLOOKUP	HLOOKUP
Stands For	Vertical Lookup	Horizontal Lookup
Searches In	First column (top to bottom)	First row (left to right)
Returns From	Another column in the same row	Another row in the same column
Use Case	Lookup employee name by ID (in columns)	Lookup marks/grades by subject (in rows)
Example Syntax	`=VLOOKUP(ID, table, 2, FALSE)`	`=HLOOKUP("Math", table, 2, FALSE)`
Limitations	Column index must be to the right	Row index must be below lookup row

Feature	VLOOKUP	HLOOKUP
Lookup Style	Searches **vertically** in first column	Searches **horizontally** in first row
Syntax	`=VLOOKUP(value, table, col, [range])`	`=HLOOKUP(value, table, row, [range])`
Example	Finding price of item by ID	Finding exam marks across rows

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13. Purpose of INDEX Function

Answer:
The `INDEX` function returns a value from a range based on **row and column numbers**.

Syntax:

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```
=INDEX(array, row_num, [column_num])
```

Example:

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`=INDEX(A1:C3, 2, 2) → returns the value at 2nd row, 2nd column in A1:C3`

Used for:

- Dynamic lookups
- More flexible than VLOOKUP

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14. Explain Row and Column Alignment

Row Alignment (Vertical):

- Controls the **vertical position** of content within a cell.
- Options: Top, Center, Bottom.

Column Alignment (Horizontal):

- Controls **horizontal alignment** of text.
- Options: Left, Center, Right.

Set via: **Home → Alignment group**

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15. Purpose of Pivot Tables

Answer:

Pivot table is an interactive tool in excel
Pivot Tables are used to **summarize and analyze** large data sets quickly.

You can group ,filter and calculate data such as sums, averages, counts and percentages.

Benefits:

- Group data by categories.
- Show totals, averages, and counts.
- Drag-and-drop fields to rearrange summaries.

Steps:

1. Select data
2. Insert → Pivot Table
3. Choose fields for Rows, Columns, Values, Filters

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16. How to perform EDA (Exploratory Data Analysis) in Excel?

Answer:
EDA in Excel involves understanding the structure and patterns in data using built-in tools.

🔹 **Steps:**

1. **Data Cleaning**
    - Remove duplicates (Data → Remove Duplicates)
    - Convert text to proper formats
2. **Descriptive Statistics**
    - Use functions: `AVERAGE`, `MEDIAN`, `MODE`, `MAX`, `MIN`, `STDEV`, `VAR`
    - Or use: **Data Analysis Toolpak → Descriptive Statistics**
3. **Visualization**
    - Create charts: Column, Pie, Line, Histogram

- Use Conditional Formatting

4. **Filtering & Sorting**
    - Use slicers, filters, and sort tools
5. **Pivot Tables**
    - To dynamically explore group-wise data insights

Feature	Excel	Tableau
Type of Tool	Spreadsheet Tool	Data Visualization and Business Intelligence (BI) Tool
Primary Use	Data entry, analysis, calculations, and reporting	Interactive dashboards, data visualizations, storytelling
User Interface	Grid-based (cells, rows, columns)	Drag-and-drop visual interface
Data Handling	Works well with small to medium datasets (up to ~1M rows)	Designed for large datasets, handles millions of rows easily
Charts & Graphs	Basic charting (bar, pie, line, etc.)	Advanced visualizations (heat maps, treemaps, maps, etc.)
Real-time Data Connection	Limited (manual refresh or VBA needed)	Strong support for real-time connections (live data sources)
Data Cleaning/Preparation	Manual using formulas, Power Query, Pivot Tables	Built-in with Data Interpreter, Prep Builder, Joins, Blends
Automation & Scripting	Macros (VBA), Power Query	Tableau Prep, Calculated Fields, Tableau API
Collaboration	File sharing (OneDrive, Email)	Tableau Server, Tableau Public, Tableau Cloud
Learning Curve	Easy for beginners	Slightly steeper for new users, but intuitive for visuals
Cost	Comes with Microsoft Office	Requires separate license (Tableau Public is free)

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What is Data Validation in Excel?

Data Validation is a feature in Excel that **restricts the type of data** or the **values** that users can enter into a cell. It helps **maintain accuracy, consistency, and integrity** in your data entry.

🔹 Purpose of Data Validation:

- Prevent incorrect or invalid data from being entered
- Limit user input to predefined choices (like dropdown lists)
- Ensure numeric, date, or text values meet specific criteria
- Reduce errors in forms or reports

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What is the Membership Concept in Excel?

The membership concept in Excel means checking if a specific value exists within a defined range. I often use it with functions like `COUNTIF`, `MATCH`, or `ISNUMBER` to validate whether an item exists in a dataset—for example, checking if a product code is valid or if a user ID is already registered.

Function	Description	Example
`MATCH()`	Returns the position of a value in a range	`=MATCH("A101", A2:A10, 0)`
`COUNTIF()`	Returns how many times a value occurs	`=COUNTIF(A2:A10, "A101")`
`ISNUMBER(MATCH())`	Returns `TRUE` if value is found	`=ISNUMBER(MATCH("A101", A2:A10, 0))`

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Data Types in Excel

1. **Number** – Numeric values used in calculations.
2. **Text (String)** – Any combination of letters, numbers, or symbols treated as text.
3. **Date/Time** – Special numerical values formatted as dates or times.
4. **Boolean (TRUE/FALSE)** – Logical values used in conditional operations.
5. **Error** – Shows when something goes wrong (e.g., `#DIV/0!`, `#VALUE!`).

How is a Formula different from a Function in Excel?

Formula	Function
The formula is like an equation in Excel, the user types in that. It can be any type of calculation depending on the user's choice.	Whereas, a function in Excel is a predefined calculation which is in-built in Excel.

Manually typing out a formula every time you need to perform a calculation, consumes more time. Ex: = A1+A2+A3	However, performing calculations becomes more comfortable and faster while working with functions. Ex: = SUM(A1:A3)

Difference between `COUNT`, `COUNTA`, and `COUNTBLANK` functions in Excel

Function	Description	Counts	Ignores	Example Use Case
`COUNT`	Counts the number of cells that contain **numeric values only**	Numbers	Text, blanks, errors	`=COUNT(A1:A10)` counts numeric entries only
`COUNTA`	Counts the number of cells that contain **any non-blank content**	Numbers, text, symbols, formulas	Blank cells	`=COUNTA(A1:A10)` counts all filled cells
`COUNTBLANK`	Counts the number of **blank (empty) cells**	Blank cells	Non-blank cells	`=COUNTBLANK(A1:A10)` counts empty cells

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What Does the `TRIM()` Function Do in Excel?

The **`TRIM()`** function is used to **remove extra spaces** from text, ensuring that only **single spaces** remain between words.

Syntax:

```
=TRIM(A1)
```
