Question 1 : Explain the difference between Absolute, Relative

ANSWER:- Cell referencing in Excel determines how a cell address behaves when a formula is

Relative Cell Referencing

Definition:

A **relative reference** changes automatically when a formula is copied to another cell.

Example:

If cell **C1** contains the formula:

=A1+B1

When you copy this formula to **C2**, it becomes:

=A2+B2

Use case:

Used when the same calculation needs to be repeated for multiple rows or columns.

Absolute Cell Referencing

Definition:

An **absolute reference** remains fixed, even when the formula is copied elsewhere.

It uses the **$ symbol** to lock the row and column.

Example:

If cell **C1** contains:

=$A$1+$B$1

When copied to **C2**, the formula remains:

=$A$1+$B$1

Use case:

Used when referencing constant values such as tax rate, discount percentage, or fixed data.

Mixed Cell Referencing

Definition:

A **mixed reference** locks either the row or the column, but not both.

Types of Mixed References:

Column fixed: $A1

Row fixed: A$1

Example:

Formula in **C1**:

=$A1+B$1

When copied to **C2**, it becomes:

=$A2+B$1

Use case:

Commonly used in tables like multiplication tables or when copying formulas across rows and

Summary Table

Reference TypeExampleBehavior when CopiedRelativeA1Row & column changeAbsolute$A$1

Conclusion

Relative references adjust automatically

Absolute references stay fixed

Mixed references partially lock row or column

These references help make Excel formulas efficient and flexible.

Question 2 : What is a Macro in Excel? How does it help in aut

ANSWER:- **What is a Macro in Excel?**

A **Macro** in Excel is a **set of recorded or written instructions** (code) that tells Excel to perform
Macros are written in **VBA (Visual Basic for Applications)** and are used to automate repetitiv
In simple words, **a macro records your actions in Excel and repeats them whenever needed**.

How does a Macro Work?

When you record a macro, Excel:
Captures your actions (clicks, formatting, calculations, etc.)
Converts them into VBA code
Saves them so they can be executed again with one click or shortcut key

How Macros Help in Automation

Macros help by:
Saving time on repetitive tasks
Reducing human errors
Performing complex tasks quickly
Running tasks with a single click

Example of a Macro

Task: Automatically format a report
A macro can:
Apply bold formatting
Change font color
Auto-fit columns
Add borders
Instead of doing this manually every time, the macro completes it in seconds.

Real-life Uses of Macros

Generating monthly sales reports
Formatting large datasets
Highlighting low stock items
Creating buttons for quick actions
Cleaning and organizing data

Advantages of Macros

Fast execution
Consistent results
Easy automation of daily tasks
Improves productivity

Conclusion

A **Macro in Excel** is a powerful automation tool that allows users to **automate repetitive and**

Question 3 : What are Text Functions in Excel? Mention any fiv

ANSWER:- **Text Functions** in Excel are used to **manipulate, clean, and format text data**. They help in combining text, extracting specific parts of text, changing text case, and cleaning

Five Common Text Functions in Excel (with Examples)

LEFT()
Purpose: Extracts a specified number of characters from the **left side** of a text.
Example:
Formula:
=LEFT("Excel",2)
Output:
Ex
Use case: Extract country code, initials, or starting characters.

RIGHT()
Purpose: Extracts characters from the **right side** of a text.
Example:
Formula:
=RIGHT("Excel",3)
Output:
cel
Use case: Extract last digits of ID or phone number.

MID()
Purpose: Extracts text from the **middle** of a string.
Example:
Formula:
=MID("Excel",2,3)
Output:
xce
Use case: Extract specific codes from text strings.

UPPER()
Purpose: Converts text into **uppercase**.
Example:
Formula:
=UPPER("excel")
Output:
EXCEL
Use case: Standardizing text data.

LOWER()
Purpose: Converts text into **lowercase**.

Example:
Formula:
=LOWER("EXCEL")
Output:
excel
Use case: Data cleaning and consistency.

Summary Table
FunctionDescriptionExampleLEFTExtract from left=LEFT("Excel",2)RIGHTExtract from right=RI

Conclusion
Text functions in Excel are essential for **cleaning and transforming text data**, especially when

Question 4 : What is the use of Scenario Manager in decision

Answer:- **Use of Scenario Manager in Decision Making**
Scenario Manager is a **What-If Analysis tool** in Excel that helps users **compare different possi**

What Scenario Manager Does
Scenario Manager allows you to:
Create **multiple scenarios** with different input values
Save and switch between scenarios easily
Compare results side-by-side
Analyze the impact of changes on final outcomes

How It Helps in Decision Making
Evaluates Multiple Possibilities
Users can test **best-case, worst-case, and most-likely scenarios** without changing the original
Example:
A company can check profit under:
High sales
Medium sales
Low sales

Reduces Risk
By analyzing outcomes in advance, decision-makers can **avoid risky choices** and prepare back

Improves Planning & Forecasting
Scenario Manager helps in **budget planning, sales forecasting, and financial modeling**.
Example:
Changing interest rate, cost, or demand to see impact on profit.

Saves Time
No need to manually change values repeatedly—scenarios can be applied with **one click**.

Provides Clear Comparison

It generates a **Scenario Summary Report**, making it easy to compare results and choose the b

Real-Life Use Case
A business owner can decide:
Whether to increase product price
How cost changes affect profit
Which strategy gives maximum profit

Conclusion
Scenario Manager is a powerful decision-making tool that helps users **analyze different outco**

Question 5 : Define the purpose of VLOOKUP and HLOOKUP. How are

Answer;- **Purpose of VLOOKUP**
VLOOKUP (Vertical Lookup) is used to **search for a value in the first column of a table** and re
Example:
=VLOOKUP(A2, A2:D10, 3, FALSE)
Looks for the value in **A2** and returns data from the **3rd column**.
Limitation:
Lookup value must be in the **first column**
Cannot look **left**
Breaks if columns are inserted/deleted

Purpose of HLOOKUP
HLOOKUP (Horizontal Lookup) works the same as VLOOKUP but searches **horizontally** in the
Example:
=HLOOKUP("Sales", A1:D5, 3, FALSE)
Searches for *Sales* in the first row and returns the value from the 3rd row.
Limitation:
Lookup value must be in the **top row**
Not flexible for large datasets

How XLOOKUP Is Different
XLOOKUP is a modern replacement for VLOOKUP and HLOOKUP.
Example:
=XLOOKUP(A2, A2:A10, C2:C10)
Advantages of XLOOKUP:
Can look **left, right, up, or down**
No need to count column numbers
Works both vertically and horizontally
Handles missing values gracefully
Does not break if columns move

XLOOKUP vs INDEX-MATCH (Which Is Better?)
INDEX-MATCH Example:

=INDEX(C2:C10, MATCH(A2, A2:A10, 0))

Comparison:

FeatureXLOOKUPINDEX-MATCHEase of useVery easyModerateLookup directionAnyAnySpeed

Which Is Best to Use?

Use XLOOKUP → When working in **modern Excel** (recommended for most users)

Use INDEX-MATCH → When working with **older Excel versions** or **very large datasets**

Conclusion

VLOOKUP & HLOOKUP are basic but limited

XLOOKUP is the most flexible and user-friendly

Question 6 : Create a dataset of 8 employees with joining date

ANSWER:- **Employee Dataset**

Emp IDEmployee NameJoining DateExperience (Years)Experience (Months)E001Amit Sharma

Assume **Joining Date is in column C**, and **today's date** is calculated using TODAY().

Excel Formulas to Calculate Experience

Experience in Years

(Enter in **Column D**, cell D2)

=DATEDIF(C274, TODAY(), "Y")

Experience in Months (Remaining months after years)

(Enter in **Column E**, cell E2)

=DATEDIF(C274, TODAY(), "YM")

Explanation

DATEDIF() calculates the difference between two dates

"Y" → completed years

"YM" → remaining months after years

Copy both formulas down for all employees.

Final Output Example (Sample)

Employee NameExperienceAmit Sharma6 Years 6 MonthsNeha Verma5 Years 11 MonthsRahu

Emp ID	Employee Name	Joining Date	Experience (Years)	Experience (Months)
E001	Amit Sharma	15-06-2019	6	7
E002	Neha Verma	10-01-2020	6	0
E003	Rahul Singh	25-03-2018	7	10

E004	Pooja Gupta	01-11-2021	4	2
E005	Suresh Kumar	18-07-2017	8	6
E006	Anjali Mehta	05-09-2022	3	4
E007	Vikram Rao	20-02-2016	9	11
E008	Sneha Patel	30-08-2020	5	5

Question 7 : You are provided with a dataset containing details of 100

ANSWER:-The dataset contains **100 road accident records** with the following fields:
Accident ID
Date
Location
Accident Type
Vehicle Type
Weather Condition
Road Condition
Severity (Minor / Moderate / Fatal)
Cause
Casualties

Step 1: Prepare the Data
Select the entire dataset
Press **Ctrl + T** → Convert to **Excel Table**
Name the table: Accident_Data
Ensure **Date column** is in proper date format

Step 2: Create Pivot Tables

Pivot Table 1: Accidents by Severity
Purpose: To analyze accident seriousness
Rows: Severity
Values: Count of Accident ID
Insight: Shows number of Minor, Moderate, and Fatal accidents.

Pivot Table 2: Accidents by Location
Purpose: Identify accident-prone cities
Rows: Location
Values: Count of Accident ID
Insight: Helps identify high-risk locations like Mumbai, Pune, Bangalore, etc.

Pivot Table 3: Accidents by Vehicle Type

Purpose: Analyze which vehicles are most involved
Rows: Vehicle Type
Values: Count of Accident ID
Insight: Shows whether accidents are higher for Bikes, Cars, Trucks, Auto-Rickshaws, etc.

Pivot Table 4: Accidents by Weather Condition
Purpose: Understand weather impact
Rows: Weather Condition
Values: Count of Accident ID
Insight: Compares accidents during Clear, Foggy, Rainy, Windy weather.

Pivot Table 5: Casualties by Severity
Purpose: Measure accident impact
Rows: Severity
Values: Sum of Casualties
Insight: Shows which severity level causes maximum casualties.

Step 3: Create Pivot Charts
Convert each Pivot Table into charts:
Pivot TableChart TypeAccidents by SeverityPie ChartAccidents by LocationColumn ChartVehic

Step 4: Add Slicers
Insert slicers for interactive analysis:
Location
Severity
Vehicle Type
Weather Condition
Road Condition
Connect slicers to **all Pivot Tables**.

Step 5: Dashboard Layout Design
Create a new sheet named **"Road Accident Dashboard"**
Layout Structure
Top: Title
ROAD ACCIDENT ANALYSIS DASHBOARD
Left Panel: Slicers
Center: Severity & Vehicle charts
Right Panel: Location & Weather charts
Bottom: Casualties analysis

Key Insights from Dashboard
Fatal accidents contribute to **maximum casualties**
Certain locations show **higher accident frequency**
Two-wheelers and Auto-Rickshaws show higher involvement
Bad weather and damaged roads increase accident risk

Conclusion (Exam-Perfect)

Conclusion (Exam-Perfect)

The Road Accident Analysis Dashboard created using Pivot Tables and Slicers provides an inte
It helps identify high-risk locations, vehicle types, and severity patterns, supporting effective

Question 8 : Create a table of 10 products with stock levels. Use Macr

Answer:-

Product ID	Product Name	Stock
P001	Pen	8
P002	Pencil	55
P003	Notebook	25
P004	Eraser	5
P005	Marker	60
P006	Scale	12
P007	File	45
P008	Folder	70
P009	Stapler	9
P010	Glue	30

Question 9 : You are given a dataset : Create a drop-down list of product names in a separate
its corresponding price is automatically displayed.

Answer:-**METHOD 1 (BEST & SIMPLE): XLOOKUP**

Paste this formula in **N2**:

=XLOOKUP(M2, $F$2:$F$101, $H$2:$H$101)

How this works:

M2 → Selected product from dropdown

$F$2:$F$101 → Product Name column

$H$2:$H$101 → Unit Price column

As soon as you select a product, **price appears automatically**

METHOD 2 (EXAM-FRIENDLY): VLOOKUP

If XLOOKUP is not available, use this:

=VLOOKUP(M2, $F$2:$H$101, 3, FALSE)

Explanation:

Product Name is in column **F**

Unit Price is **3rd column** in range F:H

Question 10 : Case Scenario :- You are a data analyst working for a retail firm. Y
Your job is to analyze this data, clean inconsistencies, extract insights, and buil
Task : 1. Apply data validation in the Units Sold column to ensure only values b

digits 4.
Find the Revenue generated by each product and also label according to revenu
6. Show Total Revenue and Total Profit by Region. 7. Show Average Units Sold
Answer:-**Phone number issues**: 95543976868 → 11 digits, flagged correctly.
High Profit rows (I > 5000) → CUST1004, CUST1009 highlighted automatically.
Revenue labels can be adjusted depending on.