Advanced Excel Assignment

Question 1 : Explain the difference between Absolute, Relative, and Mixed Cell Referencing in Excel with examples.

Answer :

Relative Cell Reference :
A relative cell reference refers to a cell based on its position relative to the cell that contains the formula. It automatically adjusts when the formula is copied to another cell.
Example:
If=A1 + B1 is in cell C1, and you copy it to C2, it will become =A2 + B2.

Absolute Cell Reference :
An absolute cell reference always refers to the exact same cell, no matter where the formula is copied. You use the dollar sign ($) to lock both the column and the row.
Example:
If =$A$1 +B1 is in cell C1, and copied to C2, it will become =$A$1+B2.

Mixed Cell Reference :
A mixed cell reference locks either the row or the column, but not both.
There are two types:

1. $A1: Column A is fixed, row changes
2. A$1: Row 1 is fixed, column changes **Example:**

If =$A1 is in B1:
. Copy to B2: becomes =$A2 (row changes, column fixed).
If =A$1 is in B1:
. Copy to C1: becomes B$1 (row fixed, column changes).

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

Answer :

A Macro in Excel is a set of instructions written in VBA (Visual Basic for Applications) that automates repetitive tasks. It records your actions like clicks, typing, formatting, calculations, and then plays them back when needed - saving time and reducing manual effort. How it helps in Automation :
. Macros can replicate tasks like formatting, copying data, generating reports, etc., in just one click.
Since macros perform the same set of actions consistently. there's less chance Of mistakes.
Users can write their own VBA code for advanced automation tailored to their needs
Question 3: What are Text Functions in Excel? Mention any five with examples.

Answer

. LEFT(text, num_chars) -+ Extracts characters from the left
(where text = text string from which we want to extract, num_chars = number of characters we want to extract)
RIGHT(text, num_chars) -+ Extracts characters from the right.
LEN(text) -+ Returns text length
TRIM(text) -+ Removes extra spaces
CONCATENATE(text1, text2) or TEXTJOIN() - Joins text

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

Answer :

Scenario Manager in Excel is a feature used for what-if analysis, allowing users to evaluate how changes in key variables affect outcomes. It helps in decision making by enabling users to create, compare, and analyze multiple business scenarios-such as best case, worst case, and most likely case-without changing the actual data.
How it helps in Decision Making:
It supports data-driven decisions by helping managers understand the impact of different choices before implementing them.
Scenario Manager lets you switch between scenarios and view their effects on key metrics like profit, revenue, or budget.
It simplifies comparison by showing all scenarios in a summary report, making it easier to interpret results.

Question 5 : Define the purpose of VLOOKUP and HLOOKUP. How are they different from XLOOKUP? Which among XLOOKUP and INDEX-MATCH is best while usage?

Answer :

VLOOKUP (Vertical Lookup) and HLOOKUP (Horizontal Lookup) are Excel functions used to search for a value in a table and return a corresponding value from another column or row.

VLOOKUP: Searches for a value vertically in the first column of a range and returns a value from the same row in a specified column.
Syntax: =VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])

HLOOKUP: Searches for a value horizontally in the first row of a range and returns a value from the same column in a specified row.
Syntax: =HLOOKUP(lookup_value, table_array, row_index_num, [range_lookup])

How are they different from XLOOKUP?

XLOOKUP is a more advanced and flexible lookup function.
It replaces both VLOOKUP and HLOOKUP by allowing:

1. Vertical and horizontal lookups
2. Left-to-right and right-to-left searching
3. Dynamic arrays
4. No need for column or row index numbers

Syntax: =XLOOKUP(lookup_value, lookup_array, return_array, [if_not_found], [match_mode], [search_mode])

Feature	XLOOKUP	INDEX-MATCH
Simplicity	Easier to use (single function)	Slightly more complex (nested functions)
Flexibility	Very high (can search both ways)	Also flexible, but needs more setup
Performance (Large Data)	Fast (optimized for modern Excel)	Slightly faster in older Excel versions
Compatibility	Excel 365/2019+ only	Works in all Excel versions
Error Handling	Built-in	Requires IFERROR or IFNA