Advanced excel

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

Ans : **1. Relative Reference (Default)**

- **What it does:** The cell address adjusts automatically based on the new location when you copy a formula.
- **Syntax:** A1, B2, etc. (no dollar signs).
- **Example:** If cell C1 has =A1+B1, and you copy it to C2, it becomes =A2+B2, summing cells in the next row.

2. Absolute Reference

- **What it does:** Locks the cell reference, so it never changes, no matter where the formula is copied.
- **Syntax:** A1 (dollar sign before column and row).
- **Example:** To calculate a 5% discount on a list of prices, if the rate (5%) is in cell E1, the formula =A2*E1 in cell B2 (for price in A2) will remain =A3*E1 when copied down, always referencing the fixed tax rate. Use the **F4** key to quickly add dollar signs.

3. Mixed Reference

- **What it does:** Locks either the column or the row, but not both, allowing for partial adjustments.
- **Syntax:** $A1 (absolute column, relative row) or A$1 (relative column, absolute row).

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

Answer :

- A macro in Excel is a small program or script that automates repetitive tasks . It is essentially a sequence of user actions and commands (keystrokes, mouse clicks, formula entries, formatting choices) recorded by Excel and stored in its programming language, Visual Basic for Applications (VBA) .
- Macros help in automation by allowing complex or repetitive procedures to be executed with a single click or keyboard shortcut, significantly improving efficiency and reducing the chance of human error
  Question 3 : What are Text Functions in Excel? Mention any five with examples.
  Answer : Text functions in Excel are formulas designed to manage, format, and

manipulate text strings within a spreadsheet. They enable users to extract specific characters, change case, combine data from multiple cells, search for and replace text, and remove unwanted spaces

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

Answer : A scenario is a set of input values that you can substitute in a worksheet to perform what-if analysis. For example, you could create scenarios to show various interest rates, loan amounts, and terms for a mortgage. Excel's scenario manager lets you create and store different scenarios in the same worksheet.

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):** Searches for the lookup value in the **first column** of a table array and returns a value from a specified column in the **same row**.
  HLOOKUP (Horizontal): Searches for the lookup value in the **first row** of a table array and returns a value from a specified row in the **same column**
- **XLOOKUP vs. VLOOKUP/HLOOKUP**
  - **Direction:** XLOOKUP searches any direction (left, right, up, down), unlike VLOOKUP/HLOOKUP which are fixed.
  - **Flexibility:** Can return entire rows/columns, multiple values in one go, and defaults to exact matches.
  - **Error Handling:** Built-in if_not_found argument.
  - **Performance:** Can use binary search for speed on large sorted datasets.

  - **XLOOKUP:** Generally **better** for modern Excel (Microsoft 365/2021+) due to its single, simpler function, default exact match, and ease of use for leftward/upward lookups, making it a superior replacement for both VLOOKUP/HLOOKUP and INDEX-MATCH in most cases.