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# ASSIGNMENT-3

(MATH AND TRIGNOMENTRY FUNCTIONS, REFERENCING, NAMING RANGE)

Ques.1⇒ How do you use the SUMIF function to add values that meet a specific criteria?

Ans.1⇒ SUMIF adds numbers only when a specific condition is satisfied.

→ Used when you want total based on criteria like:

- Department
- Category
- Region.

SYNTAX: SUMIF(range, criteria, sum range)

EXAMPLE: SUMIF(A1:A10, "Sales", B1:B10)

It improves accuracy and efficiency in reports.

# Commonly used in financial and sales analysis.

Ques.2 What is the difference between the SUM and SUMPRODUCT function?

Ans.2⇒

| SUM | SUMPRODUCT |
|---|---|
| → Adds value directly | → Multiplies arrays first, then sums result |
| → Works with simple ranges | → Used for weighted calculations |
| → Example: SUM(A1:A5) | → Example: SUMPRODUCT(A1:A5, B1:B5) |

# SUMPRODUCT handles complex calculations without helper column.

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Ques.3 How would you use the ROUND, ROUNDUP and ROUNDDOWN functions?

Ans.3⇒ **ROUND**

→ Rounds a number to a specified number of digits.
→ Follows normal rounding rules.
SYNTAX: ROUND(number, num_digits)
EXAMPLE: ROUND(12.456,2) Result→12.46
# Used when standard rounding is required.

**ROUNDUP**

→ Always round a number upward, away from zero
→ Does not follow normal rounding rules.
SYNTAX: ROUNDUP(number, num_digits)
EXAMPLE: ROUNDUP(12.451,2) Result→12.46
# Useful in Billing and Pricing.

**ROUNDDOWN**

→ Always rounds a number downward, towards zero.
SYNTAX: ROUNDDOWN(number, num_digits)
EXAMPLE: ROUNDDOWN(12.459,2) Result→12.45
# Used where overestimation must be avoided.

Ques.4 Explain how to use the COUNTIF function to count cells that meet a condition.

Ans.4⇒ The COUNTIF function is used to count cells that satisfy a specific condition.
→ It works with:
- Numbers
- Text
- Logical conditions

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SYNTAX: COUNTIF (range, criteria)
EXAMPLE: COUNTIF (A1:A10, D1)

# COUNTIF is widely used in Data Analysis, Reports, and Performance Tracking to filter and count data accurately.

Ques.5 Explain how to use the PI function in Excel.

Ans.5⇒ PI() returns the value of π (3.14159).
→ It does not take any arguments.
→ Used in mathematical and engineering calculations.
EXAMPLE: PI()*A1^2
→ Gives more accurate results than manual typing.
# Ensures precision in calculation.

Ques.6 How can naming ranges improve readability and management of formulas?

Ans.6⇒ Named Ranges replace cell addresses with meaningful names.
→ Make Formulas:
• Easier to Read
• Easier to Maintain.
EXAMPLE: SUM(Salary)
Reduces errors in large spreadsheets.
# Improves clarity and professionalism.

Ques.7 How do you apply the SIN, COS and TAN functions in Excel?

Ans.7⇒ These are trigonometric functions.
→ Excel accepts angles in radians.
→ Convert degrees using RADIANS().

EXAMPLE: SIN(RADIANS(30))
COS(RADIANS(60))
TAN(RADIANS(45))

# Used in Engineering, Physics and Analytics.

Ques-8 What are Dynamic Named Ranges, and how do you create one?

Ans-8 ⇒ Dynamic Named Ranges automatically expand or shrink when data changes.

→ They are useful for charts, pivot tables, and large datasets.

→ Unlike normal ranges, they update automatically.

CREATION:

Go to formulas → Name Manager → New

Use a formula with OFFSET or INDEX.

EXAMPLE:

OFFSET(A1, 0, 0, COUNTA(A:A), 1)

# Dynamic Named Ranges reduce manual updates and improve efficiency.

Ques-9 How do you reference cells from another worksheet in a formula?

Ans-9 ⇒ To Reference another worksheet, use:

SheetName!CellAddress

EXAMPLE: Sheet2!A1 # Used for cross-sheet calculations and reports.

For a Range:

SUM(Sheet2!A1:A10)

If the sheet name has spaces, use quotes:

'Sales Data'!B2

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Ques.10 What is an array formula, and how does it differ from a regular formula?

Ans.10 ⇒ An Array formula performs multiple calculations at once on a range of values.

→ It works on arrays instead of single cells.

EXAMPLE:

SUM(A1:A5*B1:B5)

→ A regular formula works on one value at a time.

# Array formulas are more powerful and used in advanced data analysis.