Assignment - 6

1) How do you calculate loan Payments using the PMT Function?

The PMT (Payment) Function in Excel is used to calculate the fixed Periodic Payment (EMI) required to repay a loan over a specific Period at a constant interest rate.

Purpose of PMT Function

=> calculates loan EMIs
=> Helps in Financial planning
=> Used for home loans, car loans, education loans

PMT Function syntax

=PMT (rate, nper, PV, [fv], [Type])

Explain of Arguments

=> rate -> Interest Per rate per Period
=> nper -> Total number of Payments
=> PV -> Present value (loan amount)
=> fv (optional) -> Future value (usually 0)
=> Type (optional)
0 => Payment at end of Period (default)
1 => Payment at beginning of Period.

Basic Example (monthly EMI)

Loan amount : ₹ 10,00,000
Annual Interest Rate : 10%
Loan Period : 20 Years

=PMT(10%/12, 20*12, -1000000)
Result = Monthly EMI

2) what is the difference between the NPV and IRR functions?

Both NPV (Net Present value) and IRR (Internal Rate of Return) are financial functions used to evaluate investment and Project Profitability, but they work in different ways.

NPV (Net Present value)

NPV calculates the present value of future cash flows by discounting them using a given discount rate and subtracting the initial investment.

IRR (Internal Rate of Return)

IRR calculates the rate of return at which the NPV of all cash flows becomes zero.

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NPV

=NPV(rate, value 1, [value 2], ...)

IRR

=IRR (values, [guess])

Example

Initial Investment: ₹ 1,00,000

Annual Cash Flows (5 Years): ₹ 30,000

NPV calculation

=NPV (10%, B1:B5) -1000000

If result is Positive, Project is Profitable

IRR calculation

=IRR(A1:A6)

Result gives Annual return Percentage.

3) Explain how the FV Function is used to calculate the future value of an Investment.

the fv function is used to calculate the value of an investment at a future date based on a constant interest rate, regular payments, and a fixed investment period.

Purpose of FV Function

-> Finds how much an investment will grow over time
-> Used for SIP, RD, savings, retirement Planning
-> Helps in long-term Financial decisions.

FV Function syntax:

=FV (rate, nper, Pmt, [PV], [Type])

Explanation of Arguments

⇒ Rate -> Interest rate Per Period
⇒ nper -> Total number of Period
⇒ Pmt -> Regular Payment amount
⇒ PV (optional) -> Present value
⇒ Type (optional)

- -> 0 -> Payment at end of Period
- -> 1 -> Payment at bogining of Period

Example:

monthly investment = ₹5,000
Annual Interest Rate = 12%
Time Period = 10 Years
=FV(12%/12, 10*12, -5000)
Result shows total amount after 10 years.

11) How would you use the IF function to perform conditional calculations?

The IF function in Excel is a logical function used to perform conditional calculations.
It checks a given condition and returns one result if the condition is TRUE and another result if the condition is FALSE.

Purpose of the IF function

- To make decisions in formulas
- To compare values.
- To automate results based on conditions.

IF function syntax

=IF(logical_test, value_if_true, value_if_false)

Explanation of Arguments

⇒ logical_test → condition to check
⇒ value_if_true → Result if condition is TRUE
⇒ value_if_false → Result if condition is FALSE.

Example :

If marks in cell A1 are 50 or more → Pass, otherwise fail:

=IF(A1>=50, "Pass", "fail")

5) what are nested IF statements, and how can they be applied?

NestedIF statements mean using one IF function inside another IF function to test multiple conditions in a single formula.

They are used when there are more than two possible outcomes.

Purpose of Nested IF

=> To evaluate multiple conditions

=> To return different results for different ranges.

=> To automate complex decision-making.

Basic sotement of Nested IF

=IF (condition 1, result 1,
IF (condition 2, result 2,
IF (condition 3, result 3, result_if_false)))

Example 1: student Grading system.

marks	Grade
≥75	Distinction
≥60	First class
≥50	Pass
<50	Fail

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=IF(A1>=75, "Distinction",
IF(A1>=60, "First class",
IF(A1>=50, "Pass", "fail")))

6) How do you use the AND and OR Functions in combination with IF?

The AND and OR Functions are logical Functions that are often used inside the IF Function to test multiple conditions of at the same time.

Purpose :-

=> To check more than one condition in a single formula.
=> To make accurate logical decisions.
=> To simplify complex, IF conditions.

Using IF with AND Function :-

AND Function Rule

=> Returns TRUE only if all conditions are TRUE

syntax

=IF(AND(condition1, condition2, ...), value_if_true, value_if_false)

Example (Pass criteria)

A student passes only if both subject marks ≥ 50

=IF(AND(A1>=50, B17=50), "Pass", "Fail")

Pass only when both condition are satisfied.

Using IF with OR function

OR function Riddle Rule

→ Returns TRUE if any one condition is TRUE

Syntax:-

=IF(OR(condition1, condition2, ...), value_if_true, value_if_false)

Example:-

Employee is eligible if experience ≥ 5 years OR age ≥ 30:

=IF(OR(A1>=5, B1>=30), "Eligible", "Not Eligible")

Eligible if at least one condition is true.

7) what is the purpose of the IFERROR function and how does it work?

The IFERROR function in Excel is used to handle formula errors gracefully.

Instead of showing an error like #DIV/0!, #N/A, #value!, #REF!, it allows you to display a custom value or message.

→ To hide ~~errors~~ in formulas
→ To make reports clean and professional
→ To prevent calculations from breaking.

IFERROR Function syntax:-

=IFERROR (value, value_if_error)

Explanation

→ value → Formula or expression to evaluate
→ value_if_error → Result to display if an error occurs.

Basic Example (Division Error)

=IFERROR (A1/B1, "Error")

If B1=0, Excel shows "Error" instead of #DIV/0!

8) Explain the difference blw the ISNUMBER and ISTEXT Functions.

the ISNUMBER and ISTEXT Functions are information Functions in Excel.

ISNUMBER Function

The ISNUMBER Function checks whether a value is a numeric value and returns TRUE or FALSE.

syntax:

=ISNUMBER (value)

Examples

=ISNUMBER (100) ->TRUE
=ISNUMBER ("Excel") ->FALSE
=ISNUMBER (A1)

Uses:

->Data validation
->Identifying numeric entries
->Preventing calculation errors.

ISTEXT Function:

The ISTEXT function checks whether a value is text and returns TRUE or FALSE.

syntax:

=ISTEXT (value)

Examples

=ISTEXT ("Excel") ->TRUE
=ISTEXT (100) ->false
=ISTEXT (A1)

Uses:

->checking text entries
->cleaning imported data
->separating text and numbers