



B.Com Honours

Semester VI

Calicut University

OFFICE AUTOMATION TOOLS

Course Code: COM6EJ307 • Module 2 Notes

Module II: MS-Excel Spreadsheets & Financial Modeling

Covers electronic spreadsheet structure, absolute vs relative cell referencing, built-in functions (Mathematical, Statistical, Financial, Logical), Pivot Tables, Goal Seek, Solver, and error-free financial modeling.

Unit 2.1: Spreadsheet Structure & Cell Referencing

Worksheet Architecture: Grid of rows & columns (1,048,576 rows $\times$ 16,384 columns).

Cell Referencing Types:

- **Relative Referencing (A1):** Changes dynamically when formula is copied.
- **Absolute Referencing (\$A\$1):** Fixed cell reference locked with \$ symbol.
- **Mixed Referencing (\$A1 or A\$1):** Locks either column or row exclusively.

Unit 2.2: Functions, Pivot Tables, Goal Seek, & Solver

Advanced Tools:

- **Built-in Functions:** Financial (=PMT(rate, nper, pv)), Logical (=IF(), =VLOOKUP()).
- **Pivot Tables:** Interactive multi-dimensional data summarization.
- **Goal Seek & Solver:** What-If analysis tools for reverse calculation & optimization.

Practical Solved Financial Modeling Problem (Loan EMI Calculation using =PMT()): Calculate monthly equated installment (EMI) for a bank business loan of \$ PV = ₹10,00,000 \$ at annual interest rate of \$ 12\% \$ per annum (\$r = 1\% \$ per month) for a tenure of \$ 5 \$ years (\$nper = 60 \$ months).

Excel Formula: =PMT(rate / 12, nper * 12, -pv)

Step-by-step Excel Formula Working:

1. Monthly Interest Rate $\text{rate} = \frac{12\%}{12} = 0.01$ \$ (1%).
2. Total Months $\text{nper} = 5 \times 12 = 60$ \$ months.
3. Excel Formula Entry: `=PMT(0.01, 60, -1000000)`.
4. **Monthly EMI Payable** = \$ $\text{₹}22,244.45$ \$.
5. Total Interest Paid over 5 years = \$ $(22,244.45 \times 60) - 10,00,000 = \text{₹}3,34,667$ \$.

Practical Case Framework 2 (Excel Cell Referencing Syntax & Behaviour Matrix): Compare cell reference type, formula syntax, copying behavior across rows, and copying behavior across columns.

Excel Cell Referencing Syntax Reference Table:

Referencing Type	Formula Syntax Example	Behavior When Formula is Copied
Relative Reference	=A1 * B1	Both row number & column letter adjust automatically
Absolute Reference	=A1 * \$B\$1	Cell B1 remains strictly locked to original address
Mixed Reference	=\$A1 * B\$1	Column A is fixed; Row 1 is fixed

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