# MICROSOFT EXCEL (MS-EXCEL)

Microsoft Excel (MS-Excel) is a **Spreadsheet Software** developed by Microsoft that is used for storing, organizing, calculating, analyzing, and presenting data in tabular form.

A spreadsheet consists of rows and columns arranged in a grid format. The intersection of a row and column is called a **Cell**.

MS-Excel is widely used in offices, businesses, schools, banks, and organizations for calculations, budgeting, accounting, data analysis, and reporting.

## Example

Preparing a monthly salary sheet in Excel.

## Exam Tip

**MS-Excel = Spreadsheet Software**

### WHAT IS A SPREADSHEET?

A Spreadsheet is an electronic worksheet consisting of rows and columns used for storing and processing data.

It performs calculations automatically using formulas and functions.

**Example**

Student marksheets prepared in Excel.

**Exam Tip**

**Spreadsheet = Rows + Columns + Calculations**

### USES OF MS-EXCEL

MS-Excel is used for:

- Accounting
- Budgeting
- Billing
- Data Analysis
- Statistical Calculations
- Inventory Management
- Report Preparation
- Chart Creation

**Example**

Calculating annual sales of a company.

**Exam Tip**

Excel is mainly used for calculations and data analysis.

### OTHER SPREADSHEET SOFTWARE

Apart from MS-Excel, some other spreadsheet software are:

- Corel Quattro Pro
- VisiCalc
- Lotus 1-2-3
- Apple Numbers

**Example**

Lotus 1-2-3 was one of the earliest spreadsheet programs.

**Exam Tip**

**VisiCalc = First Popular Spreadsheet Software**

### STARTING MS-EXCEL

MS-Excel can be opened using different methods.

**METHOD 1**

**Using Run Command**

**Steps**

1. Click Start Button.
2. Click Run.
3. Type **excel**
4. Press Enter.

**Example**

Opening Excel using the Run dialog box.

**Exam Tip**

**Excel = Run Command for MS-ExceL**

**METHOD 2**

**Using Start Menu**

**Steps**

1. Click Start Button.
2. Select All Programs.
3. Select Microsoft Office.
4. Click Microsoft Excel.

**Example**

Opening Excel through Start Menu.

**Exam Tip**

Most commonly used method.

**DEFAULT EXCEL FILE**

When Excel opens, a blank workbook appears.

The default name is:

**Book1**

**Example**

Book1.xlsx

**Exam Tip**

**Default Workbook Name = Book1**

**FILE EXTENSIONS OF EXCEL**

**Modern Excel File**

**.xlsx**

**Older Excel File**

**.xls**

**Example**

Result.xlsx

**Exam Tip**

**.xlsx = MS-Excel Workbook**

**COMPONENTS OF MICROSOFT EXCEL**

**TITLE BAR**

The Title Bar appears at the top of the Excel window.

It displays:

- Workbook Name
- Application Name

**Example**

Book1 - Microsoft Excel

**Exam Tip**

**Title Bar = Workbook Name + Application Name**

**CONTROL BUTTONS**

Located on the Title Bar.

**Minimize**

Sends the window to the taskbar.

**Maximize**

Expands the window to full screen.

**Close**

Closes the Excel window.

**Exam Tip**

MMC = Minimize, Maximize, Close

**RIBBON**

The Ribbon is the command area containing tools and commands organized into tabs.

**Example**

Using the Home Tab to change font size.

**Exam Tip**

**Ribbon = Collection of Tabs**

**TABS IN MS-EXCEL**

MS-Excel contains several tabs on the Ribbon.

**HOME TAB**

The Home Tab contains commonly used commands.

**Groups Present**

- Clipboard
- Font
- Alignment
- Number
- Styles
- Cells
- Editing

**Example**

Making text bold.

**Exam Tip**

**Home Tab = Most Frequently Used Commands**

**INSERT TAB**

The Insert Tab is used to insert objects into a worksheet.

**Groups Present**

- Tables
- Illustrations
- Charts
- Sparklines
- Filter
- Links
- Text
- Symbols

**Example**

Inserting a chart.

**Exam Tip**

**Insert Tab = Add Objects**

**PAGE LAYOUT TAB**

Controls worksheet appearance and printing settings.

**Groups Present**

- Themes
- Page Setup
- Scale to Fit
- Sheet Options
- Arrange

**Example**

Changing page margins.

**Exam Tip**

**Page Layout = Worksheet Design**

**FORMULAS TAB**

Used for formulas and functions.

**Groups Present**

- Function Library
- Defined Names
- Formula Auditing
- Calculation

**Example**

Using the SUM function.

**Exam Tip**

**Formulas Tab = Functions and Calculations**

**DATA TAB**

Used for managing and analyzing data.

**Groups Present**

- Get External Data
- Connections
- Sort & Filter
- Data Tools
- Outline

**Example**

Sorting student marks.

**Exam Tip**

**Data Tab = Data Analysis Tools**

**REVIEW TAB**

Used for proofreading and reviewing worksheets.

**Groups Present**

- Proofing
- Language
- Comments
- Changes

**Example**

Adding comments to cells.

**Exam Tip**

**Review Tab = Proofreading Tools**

**VIEW TAB**

Controls worksheet display options.

**Groups Present**

- Workbook Views
- Show
- Zoom
- Window
- Macros

**Example**

Zooming into a worksheet.

**Exam Tip**

**View Tab = Display Settings**

**STATUS BAR**

The Status Bar appears at the bottom of the Excel window.

It displays information about the active worksheet.

**Information Displayed**

- Worksheet Status
- Page Number
- Zoom Level
- View Shortcuts

**Example**

Showing Zoom 100%.

**Exam Tip**

**Status Bar = Worksheet Information Area**

**FORMULA BAR**

The Formula Bar is located below the Ribbon.

It is used to:

- Enter Data
- Edit Data
- Enter Formulas
- View Formula Contents

**Example**

Typing =SUM(A1:A5)

**Exam Tip**

**Formula Bar = Formula Entry Area**

**NAME BOX**

The Name Box is located to the left of the Formula Bar.

It displays the reference of the active cell.

**Example**

A1, B5, C10

**Exam Tip**

**Name Box = Cell Address Display**

**CELL**

A Cell is the intersection of a row and a column.

Each cell has a unique address.

**Example**

A1

- A = Column
- 1 = Row

**Exam Tip**

**Cell Address = Column + Row**

**FUNCTIONS IN MS-EXCEL**

Functions are predefined formulas used to perform calculations automatically.

**Example**

=SUM(A1:A5)

**Exam Tip**

**Function = Predefined Formula**

**IMPORTANT FUNCTIONS OF MS-EXCEL**

**SUM FUNCTION**

The SUM function adds values.

**Syntax**

=SUM(A1:A5)

**Exampl**

Adds all numbers from A1 to A5.

**Exam Tip**

**SUM = Addition**

**AVERAGE FUNCTION**

Calculates the average of values.

**Syntax**

=AVERAGE(A1:A5)

**Example**

Calculates average marks of students.

**Exam Tip**

**AVERAGE = Mean Value**

**COUNT FUNCTION**

Counts cells containing numeric values.

**Syntax**

=COUNT(A1:A5)

**Example**

Counts number of students with marks.

**Exam Tip**

**COUNT = Count Numbers**

**MAX FUNCTION**

Returns the largest value.

**Syntax**

=MAX(A1:A5)

**Example**

Finds highest marks.

**Exam Tip**

**MAX = Highest Value**

**MIN FUNCTION**

Returns the smallest value.

**Syntax**

=MIN(A1:A5)

**Example**

Finds lowest marks.

**Exam Tip**

**MIN = Lowest Value**

**FUNCTION TABLE**

| Function | Purpose | Example |
|---|---|---|
| SUM | Adds values | =SUM(A1:A5) |
| AVERAGE | Calculates average | =AVERAGE(A1:A5) |
| COUNT | Counts numeric cells | =COUNT(A1:A5) |
| MAX | Finds largest value | =MAX(A1:A5) |
| MIN | Finds smallest value | =MIN(A1:A5) |

**MOST IMPORTANT EXAM FACTS**

**MS-Excel**

Spreadsheet Software.

**Default Workbook Name**

Book1

**Excel Extension**

.xlsx

**Formula Bar**

Used to enter formulas.

**Name Box**

Displays active cell address.

**Cell**

Intersection of row and column.

**SUM Function**

Adds values.

**MAX Function**

Returns highest value.

**MIN Function**

Returns lowest value.

**COUNT Function**

Counts numeric cells.

**QUICK REVISION TABLE**

| Topic | Remember As |
|---|---|
| MS-Excel | Spreadsheet Software |
| Workbook | Excel File |
| Worksheet | Spreadsheet Page |
| Cell | Row + Column Intersection |
| Formula Bar | Formula Entry Area |
| Name Box | Cell Address |
| SUM | Addition |
| AVERAGE | Mean |
| COUNT | Count Numbers |
| MAX | Highest Value |
| MIN | Lowest Value |

## BASIC TERMS OF SPREADSHEET

A **Spreadsheet** is an electronic worksheet used to enter, calculate, organize, manipulate, and analyze data in the form of rows and columns.

It is widely used for accounting, budgeting, billing, statistical analysis, and record management.

**Example**

Preparing a student marksheet in MS-Excel.

**Exam Tip**

**Spreadsheet = Rows + Columns + Calculations**

## CELL

A **Cell** is the intersection point of a row and a column.

It is the basic unit of a worksheet where data is entered.

A cell can contain:

- Numbers (Constants)
- Text (Labels)
- Formulas

**Example**

Cell A1

**Exam Tip**

**Cell = Intersection of Row and Column**

## TYPES OF DATA IN A CELL

### NUMBERS (CONSTANTS)

Numeric values entered into a cell.

**Example**

250, 5000, 98

**Exam Tip**

Numbers are used in calculations.

### TEXT (LABELS)

Alphabetic or descriptive information.

**Example**

Name, Salary, Total Marks

**Exam Tip**

Labels describe data.

### FORMULAS

Mathematical expressions used to perform calculations.

**Example**

=SUM(A1:A5)

**Exam Tip**

**Formula Always Begins with "="**

### WORKSHEET

A **Worksheet** is a collection of rows and columns containing cells.

It is also called a **Sheet**.

A worksheet stores data in tabular form.

**Example**

A salary sheet containing employee details.

**Exam Tip**

**Worksheet = Single Spreadsheet Page**

### WORKBOOK

A **Workbook** is an Excel file that contains one or more worksheets.

**Example**

Book1.xlsx

**Exam Tip**

**Workbook = Collection of Worksheets**

**IMPORTANT FACT**

In traditional MS-Excel versions, a new workbook contains **3 worksheets by default**.

**Example**

Sheet1, Sheet2, Sheet3

**Exam Tip**

**Default Worksheets = 3 (Traditional Versions)**

## ROW

A **Row** is a horizontal arrangement of cells.

Rows are identified by numbers.

**Row Numbering**

1, 2, 3, 4, 5, …

**Example**

Row 10

**Exam Tip**

**Rows = Horizontal = Numbers**

## COLUMN

A **Column** is a vertical arrangement of cells.

Columns are identified by letters.

**Column Naming**

A, B, C, D … Z, AA, AB, AC …

**Example**

Column C

**Exam Tip**

**Columns = Vertical = Letters**

## ACTIVE CELL

The Active Cell is the currently selected cell in which data can be entered or edited.

It is highlighted by a border.

**Example**

Cell B4 selected for entering marks.

**Exam Tip**

**Active Cell = Currently Working Cell**

## CELL POINTER

A **Cell Pointer** is the highlighted boundary around the active cell.

It indicates the current position in the worksheet.

**Example**

Black border around Cell A1.

**Exam Tip**

**Cell Pointer Identifies the Active Cell**

## FORMULA

A Formula is an equation used to calculate values in a worksheet.

Every formula must begin with an Equal Sign (=).

**Example**

= A1 + A2

**Exam Tip**

**Formula Always Starts with "="**

## CELL ADDRESS

A Cell Address identifies the location of a cell by combining its column letter and row number.

**Example**

A1

Where:

- A = Column
- 1 = Row

**Other Examples**

- B5
- C10

- D25

**Exam Tip**

**Cell Address = Column Letter + Row Number**

**QUICK REVISION TABLE**

| Term | Meaning |
|---|---|
| Cell | Intersection of Row and Column |
| Worksheet | Single Spreadsheet Page |
| Workbook | Collection of Worksheets |
| Row | Horizontal Cells |
| Column | Vertical Cells |
| Active Cell | Currently Selected Cell |
| Cell Pointer | Border Around Active Cell |
| Formula | Mathematical Equation |
| Cell Address | Location of Cell |

**CHARTS IN MS-EXCEL**

A **Chart** is the graphical representation of worksheet data.

Charts help users understand data quickly through visual presentation.

**Example**

Displaying monthly sales using a chart.

**Exam Tip**

**Chart = Graphical Representation of Data**

**TYPES OF CHARTS**

**AREA CHART**

An Area Chart emphasizes the magnitude of change over time.

The area below the line is filled with color.

**Example**

Showing annual profit growth.

**Exam Tip**

**Area Chart = Magnitude of Change**

**COLUMN CHART**

A Column Chart displays data using vertical columns.

It is used to compare values or show changes over time.

**Example**

Comparing marks of students.

**Exam Tip**

**Column Chart = Vertical Bars**

**BAR CHART**

A Bar Chart displays data using horizontal bars.

Categories are shown vertically while values are shown horizontally.

**Example**

Comparing sales of products.

**Exam Tip**

**Bar Chart = Horizontal Bars**

**LINE CHART**

A Line Chart shows trends and changes over time.

Data points are connected by lines.

**Example**

Monthly temperature changes.

**Exam Tip**

**Line Chart = Trends Over Time**

**PIE CHART**

A Pie Chart shows how individual values contribute to a whole.

It is divided into slices.

**Example**

Market share of companies.

**Exam Tip**

**Pie Chart = Parts of a Whole**

**XY (SCATTER) CHART**

A Scatter Chart shows the relationship between two numerical variables.

It plots data as XY coordinates.

**Example**

Relationship between study hours and marks.

**Exam Tip**

**Scatter Chart = Relationship Between Variables**

**CHART COMPARISON TABLE**

| Chart Type | Best Used For |
|---|---|
| Area Chart | Magnitude of Change |
| Column Chart | Comparison Over Time |
| Bar Chart | Comparing Categories |
| Line Chart | Trends |
| Pie Chart | Proportions |
| Scatter Chart | Relationship Between Variables |

**COMPONENTS OF A CHART**

**CHART AREA**

The entire area occupied by the chart.

It includes all chart elements.

**Example**

Complete chart including title and legend.

**Exam Tip**

**Chart Area = Entire Chart**

**PLOT AREA**

The area where actual data is displayed graphically.

**Example**

Bars, lines, and pie slices displayed in the chart.

**Exam Tip**

**Plot Area = Data Display Area**

**CHART TITLE**

The heading of the chart.

It explains what the chart represents.

**Example**

"Monthly Sales Report"

**Exam Tip**

**Chart Title = Name of Chart**

**AXIS TITLE**

Titles given to chart axes.

**Types**

- X-Axis Title
- Y-Axis Title
- Z-Axis Title (3D Charts)

**Example**

X-Axis = Months

Y-Axis = Sales

**Exam Tip**

**Axis Titles Describe Axes**

**DATA SERIES**

A row or column of values plotted in a chart.

**Example**

Monthly sales figures.

**Exam Tip**

**Data Series = Data Used in Chart**

**GRIDLINES**

Horizontal and vertical reference lines that improve readability.

**Example**

Lines helping identify chart values.

**Exam Tip**

**Gridlines Improve Chart Reading**

**LEGEND**

A Legend identifies different data series represented in the chart.

**Example**

Blue = Sales

Red = Profit

**Exam Tip**

**Legend = Data Identifier**

**DATA LABEL**

Displays exact values directly on chart elements.

**Example**

Showing "500" above a column.

**Exam Tip**

**Data Label = Actual Value Display**

**DATA TABLE**

A Data Table displays chart data in tabular form along with the chart.

**Example**

Monthly sales data displayed below a chart.

**Exam Tip**

**Data Table = Chart Data in Table Format**

**IMPORTANT EXAM FACTS**

**Chart Wizard**

Chart Wizard is used to create charts in MS-Excel.

**Example**

Creating a Pie Chart using Chart Wizard.

**Exam Tip**

**Chart Wizard = Chart Creation Tool**

**Embedded Chart**

A chart created on an existing worksheet.

**Example**

Sales chart placed within the worksheet.

**Exam Tip**

**Embedded Chart = Chart on Same Worksheet**

**$ Sign in Excel**

The Dollar Sign ($) locks a cell reference to a fixed position.

**Example**

$A$1

**Exam Tip**

**$ = Absolute Cell Reference**

**Stacked Bar/Column Chart**

Shows the relationship of individual items to the whole.

**Example**

Department-wise contribution to total sales.

**Exam Tip**

**Stacked Chart = Part-to-Whole Relationship**

**MOST IMPORTANT EXAM QUESTIONS**

| Question | Answer |
|---|---|
| Intersection of Row and Column? | Cell |
| Collection of Worksheets? | Workbook |
| Horizontal Arrangement? | Row |
| Vertical Arrangement? | Column |
| Formula Begins With? | = |
| Graphical Representation of Data? | Chart |
| Pie Chart Shows? | Proportion |
| Trend Over Time? | Line Chart |
| Relationship Between Variables? | Scatter Chart |
| Chart Creation Tool? | Chart Wizard |
| Locks Cell Reference? | $ Sign |

**ADVANCED MICROSOFT EXCEL**

The following topics cover advanced Excel functions, Data Tab tools, Review Tab features, cell references, Excel errors, and chart concepts frequently asked in competitive examinations.

**DATE AND TIME FUNCTIONS**

Date and Time Functions are used to work with dates, months, years, days, and time values in Excel.

**TODAY()**

Returns the current system date.

**Syntax**

=TODAY()

**Example**

If today's date is 11-06-2026

=TODAY()

Result: 11-06-2026

**Exam Tip**

**TODAY() returns only the current date.**

**NOW()**

Returns the current date and current time.

**Syntax**

=NOW()

**Example**

Result: 11-06-2026 10:30 AM

**Exam Tip**

**NOW() returns both date and time.**

**DATE()**

Returns a valid date from year, month, and day values.

**Example**

=DATE(2026,6,11)

Result: 11-Jun-2026

**Exam Tip**

DATE() creates a date value.

**DAY()**

Returns the day number from a date.

**Example**

=DAY("11-Jun-2026")

Result: 11

**Exam Tip**

DAY() extracts day value.

**MONTH()**

Returns the month number from a date.

**Example**

=MONTH("11-Jun-2026")

Result: 6

**Exam Tip**

MONTH() extracts month value.

**YEAR()**

Returns the year from a date.

**Example**

=YEAR("11-Jun-2026")

Result: 2026

**Exam Tip**

YEAR() extracts year value.

**TIME()**

Creates a time value from hours, minutes, and seconds.

**Example**

=TIME(10,30,0)

Result: 10:30 AM

**Exam Tip**

TIME() creates time values.

**TEXT FUNCTIONS**

Text Functions manipulate text strings in Excel.

**LEN()**

Returns total number of characters.

**Example**

=LEN("Computer")

Result: 8

**Exam Tip**

LEN() counts characters including spaces.

**UPPER()**

Converts text into uppercase.

**Example**

=UPPER("Clean Me")

Result: CLEAN ME

**Exam Tip**

UPPER() → Capital Letters.

**LOWER()**

Converts text into lowercase.

**Example**

=LOWER("COMPUTER")

Result: computer

**Exam Tip**

LOWER() → Small Letters.

## PROPER()

Converts first letter of every word into capital.

**Example**

=PROPER("shyam kumar")

Result: Shyam Kumar

**Exam Tip**

PROPER() → Title Case.

## CONCATENATE()

Combines multiple text strings.

**Example**

=CONCATENATE("Hello"," ","World")

Result: Hello World

**Exam Tip**

CONCATENATE() joins strings.

## TRIM()

Removes extra spaces.

**Example**

=TRIM(" Hello World ")

Result: Hello World

**Exam Tip**

TRIM() removes unnecessary spaces.

## LEFT()

Returns characters from left side.

**Example**

=LEFT("RAJASTHAN",3)

Result: RAJ

**Exam Tip**

LEFT() extracts left characters.

## RIGHT()

Returns characters from right side.

**Example**

=RIGHT("India",2)

Result: ia

**Exam Tip**

RIGHT() extracts right characters.

## MID()

Returns middle characters.

**Example**

=MID("GANGA",2,2)

Result: AN

**Exam Tip**

MID() extracts characters from middle position.

## CHAR()

Returns character corresponding to ASCII code.

**Example**

=CHAR(65)

Result: A

**Exam Tip**

CHAR() converts ASCII Number to Character.

### CODE()

Returns ASCII code of a character.

**Example**

=CODE("A")

Result: 65

**Exam Tip**

CODE() converts Character to ASCII Number.

## LOGICAL FUNCTIONS

Logical Functions return TRUE or FALSE based on conditions.

### IF()

Returns one value if condition is true and another if false.

**Example**

=IF(120>100,"Hello","Neon")

Result: Hello

**Exam Tip**

IF() = Condition Testing Function.

### AND()

Returns TRUE if all conditions are true.

**Example**

=AND(20<25,11>10)

Result: TRUE

**Exam Tip**

AND() = All Conditions True.

### OR()

Returns TRUE if any condition is true.

**Example**

=OR(5>6,15=15)

Result: TRUE

**Exam Tip**

OR() = Any One Condition True.

### NOT()

Reverses logical result.

**Example**

=NOT(10>6)

Result: FALSE

**Exam Tip**

NOT() reverses TRUE and FALSE.

### IFERROR()

Replaces an error with a specified value.

**Example**

=IFERROR(A1/B1,"Error")

**Exam Tip**

IFERROR() handles errors gracefully.

## COUNTING FUNCTIONS

### COUNT()

Counts cells containing numbers.

=COUNT(A1:A10)

**Exam Tip**

COUNT() counts numeric cells only.

### COUNTA()

Counts cells containing any data.

=COUNTA(A1:A10)

**Exam Tip**

COUNTA() counts non-empty cells.

### COUNTIF()

Counts cells matching a condition.

=COUNTIF(A1:A10,">50")

**Exam Tip**

COUNTIF() = Single Condition Counting.

### COUNTIFS()

Counts cells matching multiple conditions.

**Exam Tip**

COUNTIFS() = Multiple Conditions Counting.

## SUMMATION FUNCTIONS

### SUMIF()

Adds values according to one condition.

**Example**

=SUMIF(A1:A10,">50")

**Exam Tip**

SUMIF() = Single Condition Addition.

### SUMIFS()

Adds values according to multiple conditions.

**Exam Tip**

SUMIFS() = Multiple Conditions Addition.

## OTHER IMPORTANT FUNCTIONS

| Function | Purpose |
|---|---|
| ABS() | Converts negative value into positive value |
| EXACT() | Compares two text strings |
| REP() | Repeats text |
| CEILING() | Rounds up to nearest multiple |
| FLOOR() | Rounds down to nearest multiple |
| CLEAN() | Removes non-printable characters |
| DOLLAR() | Converts number into currency format |
| LOOKUP() | Searches a value |
| VLOOKUP() | Vertical lookup |
| HLOOKUP() | Horizontal lookup |
| QUARTILE() | Returns quartile values |
| ACCRINTM() | Returns accrued interest at maturity |

## CELL REFERENCES

Cell Reference identifies a cell location using row and column coordinates.

## RELATIVE CELL REFERENCE

Changes automatically when copied.

**Example**

=A1+B1

**Exam Tip**

Relative Reference is the default reference type.

## ABSOLUTE CELL REFERENCE

Does not change when copied.

**Example**

=$A$1

**Exam Tip**

Dollar ($) sign locks row and column.

**MIXED CELL REFERENCE**

Locks either row or column.

**Examples**

=A$1

=$A1

**Exam Tip**

Mixed Reference = Partial Locking.

**F4 KEY**

Used to switch between Relative, Absolute, and Mixed references.

**Exam Tip**

**F4 = Change Cell Reference Type**

**EXCEL ERRORS**

| Error | Meaning |
|---|---|
| #REF! | Invalid Cell Reference |
| #VALUE! | Wrong Data Type |
| #NAME? | Misspelled Function Name |
| #NULL? | Incorrect Cell Reference |
| ### | Column Width Too Small |
| #DIV/0! | Division by Zero |
| #NUM! | Invalid Numeric Value |

**Exam Tip**

**#DIV/0! occurs when dividing by zero or blank cell.**

**DATA TAB**

The Data Tab contains:

- Sort
- Filter
- Data Tools
- Connections
- Get External Data

**Exam Tip**

Data Tab = Data Management Tools.

**REVIEW TAB**

Contains:

- Proofing
- Language
- Translate
- Comments
- Compare
- Protect

**Exam Tip**

F7 = Spelling and Grammar Check.

**VIEW TAB**

Contains:

- Workbook Views
- Zoom
- Window
- Freeze Panes
- Macros

**Important Facts**

- Minimum Zoom = 10%
- Maximum Zoom = 400%
- Freeze Panes keeps headings visible while scrolling.

**Exam Tip**

Freeze Top Row keeps first row visible during scrolling.

**CHARTS**

A Chart is a graphical representation of worksheet data using bars, lines, columns, pie slices, and other visual formats.

**Exam Tip**

Chart Wizard is used to create charts in Excel.

## FORMULAS TAB IN MS-EXCEL

The **Formulas Tab** contains tools used for creating, managing, auditing, and calculating formulas in Excel.

It provides access to functions, named ranges, formula auditing tools, and calculation options.

**Main Groups in Formulas Tab**

- Function Library
- Defined Names
- Formula Auditing
- Calculation

**Example**

Using the SUM function to calculate total marks.

**Exam Tip**

**Formulas Tab = Functions + Calculations + Formula Auditing**

## FORMULA OPERATORS IN EXCEL

Operators are symbols used in formulas to perform calculations and comparisons.

## ARITHMETIC OPERATORS

Used for mathematical calculations.

| Operator | Meaning | Example |
|---|---|---|
| + | Addition | =5+3 |
| - | Subtraction | =10-2 |
| * | Multiplication | =5*4 |
| / | Division | =20/5 |
| % | Percentage | =50% |
| ^ | Power | =2^3 |

**Example**

=10+20

Result = 30

**Exam Tip**

Arithmetic Operators perform calculations.

## COMPARISON OPERATORS

Used to compare two values.

| Operator | Meaning |
|---|---|
| = | Equal To |
| > | Greater Than |
| < | Less Than |
| >= | Greater Than or Equal To |
| <= | Less Than or Equal To |
| <> | Not Equal To |

**Example**

=10>5

Result = TRUE

**Exam Tip**

Comparison Operators return TRUE or FALSE.

## TEXT OPERATOR

Used to join text strings.

**Symbol**

**&**

**Example**

="Hello"&" World"

Result = Hello World

**Exam Tip**

**& = Text Concatenation Operator**

**REFERENCE OPERATOR**

Used to define cell references and ranges.

**Example**
=A1:B10

**Exam Tip**

Reference Operators specify cell ranges.

**LOGICAL OPERATOR**

Used in logical calculations.

**Example**
=AND(A1>10,B1<20)

**Exam Tip**

Logical Operators return TRUE or FALSE.

**DOLLAR ($) SYMBOL**

Used to create an Absolute Cell Reference.

**Example**
=$A$1

**Exam Tip**

**$ Symbol = Absolute Reference**

**FUNCTION**

A Function is a predefined formula in Excel used to perform calculations automatically.

**Example**
=SUM(A1:A5)

**Exam Tip**

**Function = Predefined Formula**

**STEPS TO CREATE A FORMULA**

**Step 1**

Select the cell.

**Step 2**

Type Equal Sign (=).

**Step 3**

Enter Function Name.

**Step 4**

Specify Cell Range.

**Example**
=SUM(B1:B8)

**Exam Tip**

Every formula begins with "=" sign.

**NUMERIC ENTRIES**

Numbers and formulas entered into a cell are called Numeric Entries.

**Example**

250

=SUM(A1:A5)

**Exam Tip**

Numeric Entries = Numbers + Formulas

**IMPORTANT ARITHMETIC FUNCTIONS**

**SUM()**

Adds numbers.

**Syntax**
=SUM(A1:A5)

**Example**

A1=10, A2=20, A3=30

Result = 60

**Exam Tip**

SUM() = Addition Function

**Important Fact**

Typing only:

=SUM

without arguments results in **#NAME? Error**.

**PRODUCT()**

Multiplies numbers.

**Syntax**
=PRODUCT(A1:A5)

**Example**

2 × 3 × 4 = 24

**Exam Tip**

PRODUCT() = Multiplication Function

**MAX()**

Returns largest value.

**Example**

=MAX(10,20,30,40,50)

Result = 50

**Exam Tip**

MAX() = Highest Value

**MIN()**

Returns smallest value.

**Example**
=MIN(10,20,30,40,50)

Result = 10

**Exam Tip**

MIN() = Lowest Value

**AVERAGE()**

Returns arithmetic mean.

**Example**
=AVERAGE(0,10,20)

Result = 10

**Exam Tip**

AVERAGE() = Mean Value

**AVERAGEA()**

Calculates average including numbers, text, and logical values.

**Example**

Mixed data averaging.

**Exam Tip**

AVERAGEA() includes text and logical values.

**AVERAGEIF()**

Calculates average based on a condition.

**Example**
=AVERAGEIF(A1:A10,">50")

**Exam Tip**

AVERAGEIF() = Single Condition Average

**AVERAGEIFS()**

Calculates average using multiple conditions.

**Example**

Average marks of Science students scoring above 50.

**Exam Tip**

AVERAGEIFS() = Multiple Conditions Average

**SUB()**

Used to find difference between numbers.

**Example**
=SUB(A1,B1)

**Exam Tip**

SUB = Subtraction

**ROUND()**

Rounds a number to specified decimal places.

**Example**
=ROUND(1.666666667,2)

Result = 1.67

**Exam Tip**

ROUND() = Normal Rounding

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**ROUNDDOWN()**

Rounds downward.

**Example**
=ROUNDDOWN(8.192578,2)

Result = 8.19

**Exam Tip**

ROUNDDOWN() = Always Lower

**MOD()**

Returns remainder after division.

**Example**
=MOD(5,2)

Result = 1

**Exam Tip**

MOD() = Remainder Function

**COUNT()**

Counts cells containing numbers.

**Example**
=COUNT(A,1,2,3,4)

Result = 4

**Exam Tip**

COUNT() Counts Numeric Values Only

**ODD()**

Rounds positive number to next odd integer.

**Example**

=ODD(8)

Result = 9

**Exam Tip**

ODD() Returns Odd Number

**EVEN()**

Rounds number to nearest even integer.

**Example**

=EVEN(7)

Result = 8

**Exam Tip**

EVEN() Returns Even Number

**ACCINT()**

Returns accrued interest.

**Example**

Used in financial calculations.

**Exam Tip**

ACCINT() = Accrued Interest Function

**INT()**

Returns integer part of a number.

**Example**

=INT(12.75)

Result = 12

**Exam Tip**

INT() Removes Decimal Part

**SIGN()**

Returns sign of a number.

| Number | Result |
|---|---|
| Positive | 1 |
| Negative | -1 |
| Zero | 0 |

**Example**

=SIGN(-15)

Result = -1

**Exam Tip**

SIGN() Identifies Number Sign

**FIND()**

Returns starting position of text.

**Example**

=FIND("ag","Kushagra")

Result = 5

**Exam Tip**

FIND() = Case Sensitive

**SEARCH()**

Returns position of text.

**Example**

=SEARCH("AG","Kushagra")

Result = 5

**Exam Tip**

SEARCH() = Not Case Sensitive

**REPLACE()**

Replaces part of a string.

**Example**
=REPLACE("Computer",1,3,"Lap")

**Exam Tip**

REPLACE() Modifies Text

**SUBSTITUTE()**

Replaces existing text with new text.

**Example**
=SUBSTITUTE("India","India","Bharat")

**Exam Tip**

SUBSTITUTE() Replaces Text

**SUMSQ()**

Returns sum of squares.

**Example**
=SUMSQ(2,3)

Result = 13

**Exam Tip**

SUMSQ() = Sum of Squares

**SUMPRODUCT()**

Returns sum of products of corresponding arrays.

**Example**
=SUMPRODUCT(A1:A3,B1:B3)

**Exam Tip**

SUMPRODUCT() = Multiply Then Add

**TRUNC()**

Removes decimal part.

**Example**
=TRUNC(15.987)

Result = 15

**Exam Tip**

TRUNC() = Truncate Decimal

**POWER()**

Raises a number to a power.

**Example**
=POWER(2,10)

Result = 1024

**Exam Tip**

POWER() = Exponent Function

**SQRT()**

Returns square root.

**Example**
=SQRT(81)

Result = 9

**Exam Tip**

SQRT() = Square Root Function

**PAD()**

Adds padding characters.

**Exam Tip**

PAD() Used for Text Padding

**TRANSPOSE()**

Converts rows into columns and columns into rows.

**Example**

Row Data → Column Data

**Exam Tip**

TRANSPOSE() = Row ↔ Column

**LOG()**

Returns logarithm of a number.

**Example**

=LOG(100,10)

Result = 2

**Exam Tip**

LOG() = Logarithmic Function

**FACT()**

Returns factorial value.

**Example**

=FACT(5)

Result = 120

**Exam Tip**

FACT() = Factorial Function

**MATCH()**

Searches a value and returns its relative position.

**Syntax**

=MATCH(Lookup_Value,Lookup_Array,Match_Type)

**Example**

=MATCH(50,A1:A10,0)

**Exam Tip**

MATCH() Returns Position, Not Value.

**INDEX()**

Returns value at intersection of row and column.

**Example**

=INDEX(A1:C5,2,3)

**Exam Tip**

INDEX() Returns Cell Value from Position.

**QUICK REVISION TABLE**

| Function | Purpose |
|---|---|
| SUM | Addition |
| PRODUCT | Multiplication |
| MAX | Highest Value |
| MIN | Lowest Value |
| AVERAGE | Mean |
| ROUND | Round Off |
| MOD | Remainder |
| COUNT | Count Numbers |
| INT | Integer Part |
| SIGN | Sign of Number |
| FIND | Case Sensitive Search |

| | |
|---|---|
| SEARCH | Case Insensitive Search |
| POWER | Exponent |
| SQRT | Square Root |
| FACT | Factorial |
| MATCH | Position Lookup |
| INDEX | Value Lookup |
| TRANSPOSE | Row ↔ Column |