

✓ 1. IF Function

The most common logical formula.

Syntax:

```
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=IF(logical_test, value_if_true, value_if_false)
```

Example:

```
=IF(A1>50, "Pass", "Fail")
```

If **A1 = 60**, the result is **"Pass"**

✓ 2. AND Function

Returns **TRUE** if **all conditions are TRUE**, else returns **FALSE**.

Syntax:

```
=AND(condition1, condition2, ...)
```

Example:

```
=AND(A1>50, B1<100)
```

- A1 = 60, B1 = 90 → **TRUE**
 - A1 = 40, B1 = 90 → **FALSE**
-

✓ 3. OR Function

Returns **TRUE** if **any condition is TRUE**, else **FALSE**.

Syntax:

```
=OR(condition1, condition2, ...)
```

A1 = 40, B1 = 90 → **TRUE**

Example: `=OR(A1>50, B1<100)`

A1 = 40, B1 = 110 → **FALSE**

✓ 4. NOT Function

Reverses the result: **TRUE** becomes **FALSE**, and vice versa.

Syntax:

`=NOT (condition)`

Example:

`=NOT (A1>50)`

If A1 = 60 → returns **FALSE**

✓ 5. Nested IF

Using **multiple IFs** inside each other for multiple conditions.

Example:

`=IF (A1>80, "A", IF (A1>60, "B", IF (A1>40, "C", "Fail")))`

- A1 = 85 → A
 - A1 = 65 → B
 - A1 = 45 → C
 - A1 = 30 → Fail
-

✓ 6. IF with AND / OR (Combined)

Example using AND:

`=IF (AND (A1>40, B1="Pass"), "Qualified", "Not Qualified")`

Example using OR:

`=IF (OR (A1>90, B1>90), "Excellent", "Good")`

✓ 7. IFS Function (Excel 2019 / 365)

Simplifies nested IFs.

Syntax:

```
=IFS(condition1, result1, condition2, result2, ...)
```

Example:

```
=IFS(A1>80, "A", A1>60, "B", A1>40, "C", A1<=40, "Fail")
```

✓ 1. IF + AND

Check **multiple conditions** before taking an action.

✚ Example:

Check if a student has passed both subjects:

```
=IF(AND(A2>=35, B2>=35), "Pass", "Fail")
```

- A2 = Maths Marks
 - B2 = Science Marks
-

✓ 2. IF + OR

Check if **any one condition** is true.

✚ Example:

Check if a candidate qualifies based on **age OR experience**:

```
=IF(OR(A2>=25, B2>=5), "Eligible", "Not Eligible")
```

- A2 = Age
 - B2 = Years of Experience
-

✓ 3. IF + TEXT

Return **custom text** based on logic.

✚ Example:

Label sales status:

```
=IF(A2>50000, "High Sales", "Low Sales")
```

✓ 4. IF + ISBLANK

Check if a cell is empty and respond.

✚ Example:

```
=IF(ISBLANK(A2), "Missing Data", A2)
```

Returns "Missing Data" if A2 is blank.

✓ 5. IF + ISNUMBER + SEARCH

Find if a **keyword exists inside a cell** (case-insensitive).

✚ Example:

Check if "error" exists in a comment:

```
=IF(ISNUMBER(SEARCH("error", A2)), "Check Required", "OK")
```

✓ 6. IF + LEFT / RIGHT / MID

Analyze part of a text and take action.

✚ Example:

Check if a product code starts with "AB":

```
=IF(LEFT(A2,2)="AB", "Valid", "Invalid")
```

✓ 7. IF + MOD

Use for checking **even/odd** or multiples.

✚ Example:

Check if a number is even:

```
=IF (MOD (A2, 2)=0, "Even", "Odd")
```

✓ 8. Nested IF + AND + OR

Multiple conditions with **AND/OR** inside **IF**.

✚ Example:

```
=IF (AND (A2>=40, OR (B2="Yes", C2="Yes")), "Eligible", "Not Eligible")
```

Passes if marks ≥ 40 and at least one subject is passed.

✓ 9. IF + LEN

Check the **length** of input text.

✚ Example:

```
=IF (LEN (A2)>10, "Too Long", "OK")
```

✓ 10. IFS + ISBLANK / AND / OR

Use multiple condition checking **without nesting**.

✚ Example:

```
=IFS (  
    ISBLANK (A2), "No Data",  
    A2<35, "Fail",  
    A2<60, "Average",  
    A2>=60, "Good"
```

)