**1️⃣ INDEX Function**

🔍 **What It Does**  
Returns the value of a cell at a specific row and column in a given range.

📌 **Syntax**

INDEX(array, row\_num, [column\_num])

🧩 **Parameters**

* array: Range of cells to search
* row\_num: Row number to retrieve
* column\_num: (Optional) Column number to retrieve

💡 **Use Cases**

* Extracting data from a table by position
* Creating dynamic dashboards
* Referencing values without hardcoding cell addresses

**2️⃣ MATCH Function**

🔍 **What It Does**  
Finds the position of a value in a range (not the value itself).

📌 **Syntax**

MATCH(lookup\_value, lookup\_array, [match\_type])

🧩 **Parameters**

* lookup\_value: Value to find
* lookup\_array: Range to search (single row or column)
* match\_type:
  + 0 = Exact match
  + 1 = Less than or equal (sorted ascending)
  + -1 = Greater than or equal (sorted descending)

💡 **Use Cases**

* Finding row or column numbers
* Used with INDEX for advanced lookups
* Locating items in sorted or unsorted lists

**3️⃣ INDEX-MATCH Combo**

🔍 **What It Does**  
Combines INDEX and MATCH to perform flexible lookups. A powerful alternative to VLOOKUP.

📌 **Syntax**

=INDEX(return\_range, MATCH(lookup\_value, lookup\_range, 0))

🆚 **Why Use INDEX-MATCH Instead of VLOOKUP**

| **Feature** | **VLOOKUP** | **INDEX-MATCH** |
| --- | --- | --- |
| Left-to-right lookup | ✅ Required | ❌ Not required |
| Speed with large data | ❌ Slower | ✅ Faster |
| Column flexibility | ❌ Fixed | ✅ Dynamic |
| Error handling | ❌ Limited | ✅ Flexible |

💡 **Use Cases**

* Dynamic data extraction
* Dashboards and reports
* Multi-condition lookups

**4️⃣ XLOOKUP Function**

🔍 **What It Does**  
A modern replacement for VLOOKUP, HLOOKUP, and INDEX-MATCH. Simpler and more powerful.

📌 **Syntax**

XLOOKUP(lookup\_value, lookup\_array, return\_array, [if\_not\_found], [match\_mode], [search\_mode])

🧩 **Parameters**

* lookup\_value: Value to search for
* lookup\_array: Where to search
* return\_array: What to return
* if\_not\_found: Optional message if not found
* match\_mode: Optional match type (0 = exact)
* search\_mode: Optional search direction (1 = top to bottom)

✅ **Example**

=XLOOKUP("Apple", A2:A10, B2:B10, "Not Found")

Returns the value from B2:B10 that matches “Apple” in A2:A10, or “Not Found” if missing.

🆚 **Why Use XLOOKUP**

| **Feature** | **VLOOKUP** | **XLOOKUP** |
| --- | --- | --- |
| Left-to-right lookup | ✅ Required | ❌ Not required |
| Handles missing data | ❌ No | ✅ Yes |
| Horizontal lookup | ❌ No | ✅ Yes |
| Easier syntax | ❌ Complex | ✅ Simple |

💡 **Use Cases**

* Clean and readable formulas
* Replacing older lookup functions
* Error-proof data retrieval

**🧠 Tips for Freshers**

* ✅ Start with small datasets to practice
* ✅ Use Excel’s formula bar to understand how functions work
* ✅ Combine functions for powerful results
* ✅ Use named ranges for clarity
* ✅ Explore Excel’s “Formula Auditing” tools to trace errors

Would you like me to create a cheat sheet or interactive quiz based on this guide? Or maybe a practice workbook to apply these functions hands-on?