**Que 1 : Introduction to dictionaries: key-value pairs.**

A **dictionary** in Python is a collection of **key-value pairs**, used to store data values like a map

Basic Syntax:

my\_dict = {

"key1": "value1",

"key2": "value2",

"key3": "value3"

}

* **Keys** must be unique and immutable (like strings, numbers, or tuples).
* **Values** can be of any data type and can be duplicated.

Example : dictionary = {

"apple": "a fruit",

"car": "a vehicle",

"python": "a programming language"

}

Accessing Values by Key:

print(dictionary["car"]) # Output: a vehicle

Adding New Key-Value Pair:

dictionary["book"] = "a collection of pages”

Changing Value of Existing Key:

dictionary["python"] = "a powerful language"

Removing a Key-Value Pair:

dictionary.pop(“apple")

**Que 2 : Accessing, adding, updating, and deleting dictionary elements.**

**1. Accessing Elements**

You access a value by using its **key** inside square brackets [] or with the .get() method.

Example : person = {"name": "Krishna", "age": 20, "course": "BCA"}

print(person["name"]) # Output: Krishna

print(person.get("age")) # Output: 20

**2. Adding New Key-Value Pairs**

You can add a new key by assigning a value to it.

Example : person[“college”] = "Marwadi University"

print(person)

**3. Updating Existing Values**

Just reassign a new value to an existing key:

Example : person["age"] = 21

print(person)

**4. Deleting Elements**

There are several ways to remove items:

**Using pop() — removes by key:**

person.pop("course")

**Using del — removes by key:**

del person["age"]

**Using clear() — removes all items:**

person.clear()

**Using del — deletes the whole dictionary:**

del person

**Que 3 : Dictionary methods like keys(), values(), and items().**

These built-in methods help you access different parts of a dictionary — **keys**, **values**, or **both together**.

Sample Dictionary:

student = {

"name": "Krishna",

"age": 20,

"course": "BCA"

}

1. keys(): Returns All Keys

print(student.keys())

Output : dict\_keys(['name', 'age', 'course'])

**2. values(): Returns All Values**

print(student.values())

Output : dict\_values(['Krishna', 20, 'BCA'])

3. items(): Returns Key-Value Pairs as Tuples

print(student.items())

Output : dict\_items([('name', 'Krishna'), ('age', 20), ('course', 'BCA')])