**Python - *Collections, Functions And Modules In Python***

**Module 7: Collections - Lists, Tuples, Dictionaries**

**1. Creating and Accessing Lists**

Lists are mutable and ordered. Accessed using indexing and slicing.

**2. List Operations and Methods**

Includes append(), insert(), remove(), pop(), concatenation, and repetition.

**3. Sorting and Reversing Lists**

Lists can be sorted with sort()/sorted() and reversed with reverse()/[::-1].

**4. Tuples in Python**

Tuples are immutable sequences. Support indexing, slicing, and operations like + and \*.

**5. Accessing Tuples**

Elements can be accessed using positive/negative indexing and slicing.

**6. Dictionaries in Python**

Dictionaries store data in key-value pairs. Keys must be unique.

**7. Dictionary Methods**

Common methods include keys(), values(), items(), get(), update().

**8. Counting with Dictionaries**

Used to count frequency of items like characters in a string.

**Module 8: Control Statements**

**1. Control Statements (break, continue, pass)**

break exits loop, continue skips to next iteration, pass does nothing.

**Module 9: String Manipulation**

**1. String Manipulation in Python**

Includes slicing, concatenation, and methods like upper(), lower(), strip(), replace().

**Module 10: Functions**

**1. Functions in Python**

Defined using def keyword. Can have parameters and return values.

**2. Lambda Functions**

Anonymous, single-expression functions defined using lambda keyword.

**Module 11: Modules**

**1. Python Modules**

Modules are files with reusable code. Use import to include standard/custom modules.

**2. Standard Modules: math and random**

math provides functions like sqrt(), ceil(); random generates random numbers.