1) What is function? Give an example for it.
A function is a block of reusable code that performs a specific task.
Ex:def add(a, b):
   return a + b

print(add(3, 5)) # Output: 8
2) How many types of function in Python?
Mainly 2 types:
1. Built-in Functions (like len(), print(), sum() etc.)
2. User-defined Functions (created using def).

3) What's the difference between parameters and arguments?

Parameter → Variable defined inside the function definition.

Argument → Value passed to the function when it is called.

4) What is the difference between *args (arbitrary arguments) vs kwargs (keyword arguments)?

*args → allows passing multiple non-keyword arguments.

**kwargs → allows passing multiple keyword arguments.

Ex: def demo(*args, **kwargs):

   print("args:", args)

   print("kwargs:", kwargs)

demo(1, 2, 3, name="Srujan", age=22)

args: (1, 2, 3)

kwargs: {'name': 'Srujan', 'age': 22}

5) What is return keyword and its purpose? Explain it with an example.

   return is used to send a value back from a function.

Ex: def square(x):

    return x * x

   print(square(4))   # Output: 16

6) What is the difference between break and continue?

break - exits the loop completely.

continue - skips current iteration and moves to the next.

7) What is scope? Explain with an example.
 Scope defines the visibility of a variable (where it can be accessed).

Local scope

Global scope

Ex: x = 5   # global variable

def fun():

   y = 9   # local variable

   print(y)

fun()

print(x)

8) What is global scope variable vs local variable?

Global variable - declared outside all functions, accessible everywhere.

Local variable - declared inside a function, accessible only inside it.

9) What is the difference between global scope vs functional scope?

Global scope - variables available throughout the program.

Functional scope - variables available only within that function.

10) What is the difference between global scope vs nonlocal scope?

Global scope - variable declared outside all functions.

Nonlocal scope - variable in an enclosing (outer) function, used in nested functions.

11) What is LEGB rule? (Local, Enclosed, Global, Built-in)
 Python searches variables in this order:

1. Local - inside the current function.

2. Enclosed - variables in outer (enclosing) functions.

3. Global - declared at top-level of script.

4. Built-in - predefined names in Python.

12) What is the difference between global vs non-global keywords?

global - declares a variable as global.

nonlocal - used to refer to variables in the enclosing (non-global) scope.

13) Is it possible to access a local variable out of its scope? Explain with example.
   No, local variables cannot be accessed outside their scope.

def fun():

   a = 10

```python
    print(a)
fun()
print(a)   # Error: 'a' is not defined
```