Functions:

1. What is a lambda function in Python? a) A named function defined using the def keyword b) An anonymous function defined using the lambda keyword c) A built-in function in Python d) A function that always returns a boolean value
2. What will be the output of the following code?

python

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def func(x, y=5):

return x \* y

print(func(3))

a) 15 b) 8 c) TypeError d) None

1. Which of the following is true about variable-length arguments (\*args) in Python functions? a) They must be the last parameter in the function definition b) They allow a function to accept any number of positional arguments c) They are passed as a tuple to the function d) All of the above
2. What is the purpose of the nonlocal keyword in Python? a) To declare a global variable inside a function b) To declare a variable that is neither local nor global c) To declare a constant variable d) To declare a static variable
3. What will be the output of the following code?

python

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def outer():

x = 1

def inner():

nonlocal x

x = 2

inner()

return x

print(outer())

a) 1 b) 2 c) None d) NameError

1. Which of the following is true about default arguments in Python functions? a) They must be defined after non-default arguments b) They are evaluated at function definition time c) They can be mutable objects d) All of the above
2. What is a decorator in Python? a) A function that takes another function as an argument b) A way to modify or enhance functions without changing their code c) A special type of class d) Both a and b
3. What will be the output of the following code?

python

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def func(a, b, c=3, d=4):

return a + b + c + d

print(func(1, 2, d=5))

a) 10 b) 11 c) 12 d) TypeError

1. What is the purpose of the yield keyword in Python? a) To define a generator function b) To return multiple values from a function c) To pause the execution of a function and return a value d) Both a and c
2. What will be the output of the following code?

python

Copy

def func(x):

return x + 1

f = func

print(f(2) + func(2))

a) 4 b) 5 c) 6 d) TypeError

Functions:

1. Answer: b) An anonymous function defined using the lambda keyword Explanation: Lambda functions are small anonymous functions that can have any number of arguments but can only have one expression.
2. Answer: a) 15 Explanation: The function is called with one argument (3), so y takes its default value of 5. Thus, 3 \* 5 = 15.
3. Answer: d) All of the above Explanation: \*args allows a function to accept any number of positional arguments, which are passed as a tuple.
4. Answer: b) To declare a variable that is neither local nor global Explanation: nonlocal is used to work with variables in the nearest enclosing scope that is not global.
5. Answer: b) 2 Explanation: The inner function modifies x using the nonlocal keyword, so the change is reflected in the outer function.
6. Answer: d) All of the above Explanation: Default arguments must come after non-default arguments, are evaluated at function definition time, and can be mutable objects (though this can lead to unexpected behavior).
7. Answer: d) Both a and b Explanation: A decorator is a function that takes another function as an argument and extends its behavior without explicitly modifying it.
8. Answer: b) 11 Explanation: The function is called with a=1, b=2, c=3 (default), and d=5 (explicitly set). So 1 + 2 + 3 + 5 = 11.
9. Answer: d) Both a and c Explanation: yield is used to define generator functions, which can pause execution and return a value.
10. Answer: c) 6 Explanation: f and func refer to the same function. f(2) returns 3, and func(2) returns 3, so 3 + 3 = 6.