Pre Assessment – Advanced Python

# Assessment Questions

1. **Which of the following is a feature of Python's functional programming?**

a) Inheritance

b) First-class functions

c) Encapsulation

d) Polymorphism

1. **What does the @staticmethod decorator do in Python?**

a) Defines a method that is bound to the class and not the instance

b) Defines a method that can access class-level attributes

c) Defines a method that is bound to the instance and not the class

d) Defines a method that does not require an instance to be called

1. **Which of the following is NOT a characteristic of generator functions in Python?** a) They return an iterator

b) They use the yield keyword

c) They can be paused and resumed

d) They execute immediately and return a list

1. **What is the output of the following code?**

def func(a, b, c=5, d=10):

return a + b + c + d

result = func(1, 2, d=3)

print(result)

a) 11  
b) 16  
c) 6  
d) 10

1. **Which of the following statements about closures is TRUE?**

a) A closure is a function object that remembers values in enclosing scopes even if they are not present in memory.

b) A closure is a type of class.

c) Closures are used to encapsulate the state of an object.

d) Closures can only be created using lambda functions.

1. **What is the main purpose of the itertools module in Python?**

a) To provide functions for working with files

b) To create and manipulate iterators

c) To perform mathematical operations

d) To handle JSON data

1. **What will be the output of the following code?**

def outer():

x = 'hello'

def inner():

print(x)

return inner

my\_func = outer()

my\_func()

a) Error  
b) hello  
c) x  
d) inner

1. **Which method is called when an object is deleted in Python?**

a) \_\_init\_\_  
b) \_\_del\_\_  
c) \_\_delete\_\_  
d) \_\_remove\_\_

1. **In Python, what is a mixin class used for?**

a) To create complex inheritance hierarchies

b) To add reusable methods to classes

c) To handle exceptions

d) To enforce encapsulation

1. **What will be the output of the following code?**

def func():

for i in range(3):

yield i

gen = func()

print(next(gen))

print(next(gen))

print(next(gen))

a) 0, 1, 2  
b) 0, 1, StopIteration  
c) 0, 1, 2, StopIteration  
d) 0, 1, 2, 3

1. **Which of the following collections in Python does not allow duplicate elements?** a) List

b) Tuple

c) Set

d) Dictionary

1. **Which data structure would be most suitable for implementing a Last-In-First-Out (LIFO) mechanism?**

a) List

b) Queue

c) Stack

d) Deque

1. **What is the time complexity of accessing an element in a dictionary by its key?** a) O(1)

b) O(n)

c) O(log n)

d) O(n^2)

1. **Which module in Python provides an ordered dictionary that remembers the order of insertion?**

a) collections

b) itertools

c) functools

d) heapq

1. **What will be the output of the following code?**

from collections import deque

d = deque([1, 2, 3])

d.appendleft(0)

print(d)

a) deque([1, 2, 3, 0])

b) deque([0, 1, 2, 3])

c) deque([1, 2, 3])

d) deque([0, 2, 3])

1. **Which Python data structure can be used as both a queue and a stack?**

a) List

b) Set

c) Deque

d) Dictionary

1. **Which method is used to add an element at the end of a list in Python?**

a) append()

b) insert()

c) add()

d) extend()

1. **What is the result of the following code?**

from collections import namedtuple

Point = namedtuple('Point', 'x y')

p = Point(10, 20)

print(p.x + p.y)

a) Error

b) 10

c) 20

d) 30  
**Correct Answer:** d) 30

1. **What will be the output of the following code?**

from collections import defaultdict

def default\_value():

return 'default'

d = defaultdict(default\_value)

print(d['key'])

a) Error

b) 'key'

c) 'default'

d) None

1. **Which of the following is a module for threading in Python?**

a) multiprocessing

b) threading

c) asyncio

d) concurrent