**Module 7. Lists and Tuples**

**TRUE/FALSE**

1. Invalid indexes do not cause slicing expressions to raise an exception.

Answer: True

1. Lists are dynamic data structures such that items may be added to them or removed from them.

Answer: True

1. Arrays, which are allowed by most other programming languages, have more capabilities than Python list structures.

Answer: False

1. A list cannot be passed as an argument to a function.

Answer: False

1. Lists can store items of different data types within the same list.

Answer: True

1. The len() function can be used to determine the number of items in a list.

Answer: True

1. Lists are immutable, meaning their contents cannot be changed.

Answer: False

1. A tuple is created using square brackets [].

Answer: False

1. Tuples can store heterogeneous data types.

Answer: True

1. The append() method can be used to add an item to the end of a tuple.

Answer: False

1. Tuples are mutable, meaning their contents can be changed.

Answer: False

1. Lists in Python allow duplicate values.

Answer: True

1. Negative indexing is not supported in Python lists.

Answer: False

1. The sort() method sorts the elements of a list in place.

Answer: True

1. The index() method raises a ValueError if the specified element is not found in the list.

Answer: True

1. Tuples are created using parentheses ().

Answer: True

1. You can change the value of an item in a tuple after it is created.

Answer: False

1. Lists in Python are fixed in size once created.

Answer: False

1. A list comprehension can be used to create a new list based on existing lists.

Answer: True

1. The remove() method removes the first occurrence of a value in a list.

Answer: True

1. The insert() function adds an item at the end of a list.

Answer: False

1. Tuples are ordered collections of items.

Answer: True

1. Python lists support heterogeneous data types, meaning they can contain elements of different types.

Answer: True

1. A list can contain another list as an element.

Answer: True

1. Slicing a list creates a new list that includes the specified range of elements.

Answer: True

**MULTIPLE CHOICE**

1. What is an advantage of using a tuple rather than a list?

a. Tuples are not limited in size.

b. Tuples can include any data as an element.

c. Processing a tuple is faster than processing a list.

d. There is never an advantage to using a tuple.

Answer: c

1. Which list will be referenced by the variable number after the following code is executed?

*number = range(0, 9, 2)*

a. [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]

b. [1, 3, 5, 7, 9]

c. [2, 4, 6, 8]

d. [0, 2, 4, 6, 8]

Answer: d

1. Which of the following would you use if an element is to be removed from a specific index?

a. a del statement

b. a remove method

c. an index method

d. a slice method

Answer: a

1. Which method would you use to add an item to the end of a list?

a. append()

b. insert()

c. extend()

d. add()

Answer: a

1. How would you create a tuple with a single element?

a. my\_tuple = (1)

b. my\_tuple = (1,)

c. my\_tuple = 1,

d. both b and c

Answer: d

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

*fruits = ["apple", "banana", "cherry"]*

*fruits.append("orange")*

*print(fruits)*

a. ['apple', 'banana', 'cherry']

b. ['apple', 'banana', 'cherry', 'orange']

c. ['orange', 'apple', 'banana', 'cherry']

d. ['banana', 'cherry', 'orange']

Answer: b

1. How can you find the index of the first occurrence of an item in a list?

a. list.find(item)

b. list.locate(item)

c. list.index(item)

d. list.search(item)

Answer: c

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

*numbers = [0, 1, 2, 3, 4, 5]*

*print(numbers[1:4])*

a. [0, 1, 2]

b. [1, 2, 3]

c. [2, 3, 4]

d. [1, 2, 3, 4]

Answer: b

1. How do you create an empty list in Python?

a. empty\_list = {}

b. empty\_list = []

c. empty\_list = list()

d. both b and c

Answer: d

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

*fruits = ["apple", "banana", "cherry"]*

*print("orange" in fruits)*

a. True

b. False

c. None

d. Error

Answer: b

1. Which of the following statements is true about Python lists?

a. Lists cannot contain duplicate elements.

b. Lists are immutable.

c. Lists are ordered collections of items.

d. Lists cannot contain elements of different types.

Answer: c

1. How would you access the third element in a list named colors?

a. colors[2]

b. colors[3]

c. colors.get(2)

d. colors.get(3)

Answer: a

1. Which of the following methods is used to combine two lists?

a. append()

b. insert()

c. extend()

d. add()

Answer: c

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

*fruits = ["apple", "banana", "cherry"]*

*fruits.remove("banana")*

*print(fruits)*

a. ['apple', 'banana', 'cherry']

b. ['apple', 'cherry']

c. ['banana', 'cherry']

d. ['apple', 'banana']

Answer: b

1. How would you create a tuple containing a single item "apple"?

a. my\_tuple = ("apple")

b. my\_tuple = ("apple",)

c. my\_tuple = tuple("apple")

d. my\_tuple = ["apple"]

Answer: b

1. Which method would you use to sort the elements of a list in ascending order?

a. sort()

b. order()

c. arrange()

d. sequence()

Answer: a

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

*fruits = ["apple", "banana", "cherry"]*

*print(fruits[-1])*

a. apple

b. banana

c. cherry

d. Error

Answer: c

1. How would you reverse the elements of a list named numbers?

a. numbers.reverse()

b. numbers[::-1]

c. reversed(numbers)

d. both a and b

Answer: d

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

*numbers = [0, 1, 2, 3, 4, 5]*

*print(numbers[::2])*

a. [0, 2, 4]

b. [1, 3, 5]

c. [0, 1, 2, 3, 4, 5]

d. [5, 4, 3, 2, 1, 0]

Answer: a

1. Which of the following statements is true about Python tuples?

a. Tuples are mutable.

b. Tuples can contain elements of different types.

c. Tuples do not maintain the order of elements.

d. Tuples cannot be used as dictionary keys.

Answer: b

1. How do you access the last element of a tuple named colors?

a. colors[-1]

b. colors[len(colors)]

c. colors[len(colors) - 1]

d. both a and c

Answer: d

1. Which method is used to add an element at a specific position in a list?

a. append()

b. insert()

c. add()

d. extend()

Answer: b

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

*numbers = [0, 1, 2, 3, 4, 5]*

*print(numbers[:])*

a. [0, 1, 2, 3, 4, 5]

b. []

c. [0, 1, 2, 3, 4]

d. [1, 2, 3, 4, 5]

Answer: a

1. Which of the following functions can be used to create a new list?

a. list()

b. set()

c. tuple()

d. dict()

Answer: a

1. How would you concatenate two tuples a and b?

a. a + b

b. a.append(b)

c. a.extend(b)

d. a.insert(b)

Answer: a

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

numbers *= [1, 2, 3, 4, 5]*

*print(numbers[-2:])*

a. [4, 5]

b. [1, 2]

c. [3, 4]

d. [5, 4]

Answer: a

1. How do you create a new list from an existing list using a list comprehension?

a. new\_list = [x for x in old\_list]

b. new\_list = list(old\_list)

c. new\_list = old\_list.copy()

d. new\_list = old\_list[:]

Answer: a

1. Which of the following is a characteristic of Python lists?

a. Immutable

b. Heterogeneous elements

c. Fixed size

d. No indexing

Answer: b

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

*numbers = [1, 2, 3, 4, 5]*

*del numbers[2]*

*print(numbers)*

a. [1, 2, 4, 5]

b. [1, 2, 3, 5]

c. [1, 2, 3, 4]

d. [2, 3, 4, 5]

Answer: a

1. How can you remove all elements from a list?

a. list.clear()

b. list.delete()

c. list.remove()

d. list.pop()

Answer: a