**Starting Out with Python 4e (Gaddis)**

**Chapter 7 Lists and Tuples**

**TRUE/FALSE**

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

ANS: T

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

ANS: T

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

ANS: F

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

ANS: F

5. The **remove** method removes all occurrences of an item from a list.

ANS: F

6. The **sort** method rearranges the elements of a list so they are in ascending or descending order.

ANS: F

7. The index of the first element in a list is **1**, the index of the second element is **2**, and so forth.

ANS: F

8. The index **-1** identifies the last element in a list.

ANS: T

9. To calculate the average of the numeric values in a list, the first step is to get the total of values in the list.

ANS: T

10. In slicing, if the end index specifies a position beyond the end of the list, Python will use the length of the list instead.

ANS: T

11. In order to create graphs using the **matplotlib** package, you need to import the **pyplot** module.

ANS: T

12. To add a descriptive label to the X and Y axes of a graph when using the **matplotlib** package, you need to import the **labels** module.

ANS: F

**MULTIPLE CHOICE**

1. What are the data items in a list called?

|  |  |
| --- | --- |
| a. | data |
| b. | elements |
| c. | items |
| d. | values |

ANS: B

2. When working with multiple sets of data, one would typically use a(n)

|  |  |
| --- | --- |
| a. | list |
| b. | tuple |
| c. | nested list |
| d. | sequence |

ANS: C

3. The primary difference between a tuple and a list is that

|  |  |
| --- | --- |
| a. | you don't use commas to separate elements in a tuple |
| b. | a tuple can only include string elements |
| c. | a tuple cannot include lists as elements |
| d. | once a tuple is created, it cannot be changed |

ANS: D

4. 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. |

ANS: C

5. 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]** |

ANS: D

6. 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 |

ANS: A

7. What is the first negative index in a list?

|  |  |
| --- | --- |
| a. | **0** |
| b. | **-1** |
| c. | **-0** |
| d. | the size of the list minus 1 |

ANS: B

8. Which method can be used to place an item at a specific index in a list?

|  |  |
| --- | --- |
| a. | **append** |
| b. | **index** |
| c. | **insert** |
| d. | **add** |

ANS: C

9. Which method or operator can be used to concatenate lists?

|  |  |
| --- | --- |
| a. | **\*** |
| b. | **+** |
| c. | **%** |
| d. | **concat** |

ANS: B

10. Which method can be used to convert a list to a tuple?

|  |  |
| --- | --- |
| a. | **append** |
| b. | **tuple** |
| c. | **insert** |
| d. | **list** |

ANS: B

11. Which method can be used to convert a tuple to a list?

|  |  |
| --- | --- |
| a. | **append** |
| b. | **tuple** |
| c. | **insert** |
| d. | **list** |

ANS: D

12. What will be the value of the variable **list** after the following code executes?

**list = [1, 2]**

**list = list \* 3**

|  |  |
| --- | --- |
| a. | **[1, 2] \* 3** |
| b. | **[3, 6]** |
| c. | **[1, 2, 1, 2, 1, 2]** |
| d. | **[1, 2], [1, 2], [1, 2]** |

ANS: C

13. What will be the value of the variable **list** after the following code executes?

**list = [1, 2, 3, 4]**

**list[3] = 10**

|  |  |
| --- | --- |
| a. | **[1, 2, 3, 10]** |
| b. | **[1, 2, 10, 4]** |
| c. | **[1, 10, 10, 10]** |
| d. | Nothing; this code is invalid |

ANS: A

14. What will be the value of the variable **list2** after the following code executes?

**list1 = [1, 2, 3]**

**list2 = []**

**for element in list1:**

**list2.append(element)**

**list1 = [4, 5, 6]**

|  |  |
| --- | --- |
| a. | **[1, 2, 3]** |
| b. | **[4, 5, 6]** |
| c. | **[1, 2, 3, 4, 5, 6]** |
| d. | Nothing; this code is invalid |

ANS: A

15. In order to create a graph in Python, you need to include

|  |  |
| --- | --- |
| a. | **import matplotlib** |
| b. | **import pyplot** |
| c. | **import matplotlib.pyplot** |
| d. | **import matplotlib**  **import pyplot** |

ANS: C

16. What will be the output after the following code is executed?

**import matplotlib.pyplot as plt**

**def main():**

**x\_crd = [0, 1 , 2, 3, 4, 5]**

**y\_crd = [2, 4, 5, 2]**

**plt.plot(x\_crd, y\_crd)**

**main()**

|  |  |
| --- | --- |
| a. | It will display a simple line graph. |
| b. | It will display a simple bar graph. |
| c. | Nothing; **plt** is not a Python method. |
| d. | Nothing; the number of x-coordinates do not match the number of y-coordinates. |

ANS: D

**COMPLETION**

1. A(n) \_\_\_\_\_\_\_\_\_\_ is an object that holds multiple items of data.

ANS: sequence

2. Each element in a tuple has a(n) \_\_\_\_\_\_\_\_\_\_ that specifies its position in the tuple.

ANS: index

3. The built-in function \_\_\_\_\_\_\_\_\_\_ returns the length of a sequence.

ANS: **len**

4. Tuples are \_\_\_\_\_\_\_\_\_\_ sequences which means that once a tuple is created, it cannot be changed.

ANS: immutable

5. A(n) \_\_\_\_\_\_\_\_\_\_\_ is a span of items that are taken from a sequence.

ANS: slice

6. Lists are \_\_\_\_\_\_\_\_\_\_\_, which means their elements can be changed in a program.

ANS: mutable

7. The \_\_\_\_\_\_\_\_\_\_ method is commonly used to add items to a list.

ANS: **append**

8. The \_\_\_\_\_\_\_\_\_\_ exception is raised when a search item is not in the list being searched.

ANS: **ValueError**

9. The \_\_\_\_\_\_\_\_\_\_ method reverses the order of the items in a list.

ANS: **reverse**

10. The \_\_\_\_\_\_\_\_\_\_ function returns the item that has the lowest value in the sequence.

ANS: **min**

11. The \_\_\_\_\_\_\_\_\_\_ package is a library you can use in Python to create two-dimensional charts and graphs.

ANS: **matplotlib**

12. The \_\_\_\_\_\_\_\_\_\_\_ function can be used to convert a list to a tuple.

ANS: **tuple**