

Chapter 02: 2. An Overview of Collections

1. A collection contains at least one item.

- a. True
- b. False

ANSWER: False

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Collection Types

QUESTION TYPE: True / False

HAS VARIABLES: False

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2. The use of collections is a Python programming requirement, but they are not very useful for working with real-world objects.

- a. True
- b. False

ANSWER: False

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Collection Types

QUESTION TYPE: True / False

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3. A set is a built-in Python collection type.

- a. True
- b. False

ANSWER: True

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Collection Types

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4. A tuple is an immutable collection type.

- a. True
- b. False

ANSWER: True

POINTS: 1

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5. A line of customers waiting to get into a movie is an example of a hierarchical collection.

- a. True
- b. False

ANSWER: False
POINTS: 1
DIFFICULTY: Easy
REFERENCES: Collection Types
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6. Graph collections are organized in a parent/children relationship.

- a. True
- b. False

ANSWER: False
POINTS: 1
DIFFICULTY: Easy
REFERENCES: Collection Types
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7. A search operation is usually more efficient on a sorted collection than on an unsorted collection.

- a. True
- b. False

ANSWER: True
POINTS: 1
DIFFICULTY: Easy
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8. A sorted collection must be in a linear structure, ordered by position.

- a. True
- b. False

ANSWER: False

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Collection Types

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9. To traverse a collection's items, use the *for* loop.

- a. True
- b. False

ANSWER: True

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Operations On Collections

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10. Use the *&* operator to concatenate two collections.

- a. True
- b. False

ANSWER: False

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Operations On Collections

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11. To determine equality of two collections, use the *==* operator.

- a. True
- b. False

ANSWER: True

POINTS: 1

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REFERENCES: Operations On Collections
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12. The *pop* method is used to add items to a Python list.

- a. True
- b. False

ANSWER: False
POINTS: 1
DIFFICULTY: Easy
REFERENCES: Operations On Collections
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13. All collections are also iterable objects.

- a. True
- b. False

ANSWER: True
POINTS: 1
DIFFICULTY: Easy
REFERENCES: Operations On Collections
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14. If you clone an object using the = operator (as in *myList=list(yourList)*), the *is* operator returns True while the == operator returns False.

- a. True
- b. False

ANSWER: False
POINTS: 1
DIFFICULTY: Moderate
REFERENCES: Operations On Collections
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15. When collections share mutable items, a deep copy using a *for* loop should be used to explicitly clone items before adding them to a new collection.

- a. True
- b. False

ANSWER: True

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Operations On Collections

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16. To be considered equal, two lists must have the same length and the same items in each position, whereas the same sets must simply contain exactly the same items, but in no particular order.

- a. True
- b. False

ANSWER: True

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Operations On Collections

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17. When using a *for* loop to iterate over a list, the items are visited in no particular order.

- a. True
- b. False

ANSWER: False

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Operations On Collections

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18. The map, filter, and reduce functions can only be used on list collections.

- a. True

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b. False

ANSWER: False
POINTS: 1
DIFFICULTY: Easy
REFERENCES: Operations On Collections
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19. By default, items in a sorted collection are visited in descending order when using a *for* loop iterator.

a. True

b. False

ANSWER: False
POINTS: 1
DIFFICULTY: Easy
REFERENCES: Operations On Collections
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20. When a shallow copy of a collection is made, only references to the items in the new collection are copied.

a. True

b. False

ANSWER: True
POINTS: 1
DIFFICULTY: Easy
REFERENCES: Operations On Collections
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21. In computer science, collections are also called objective data types (ODTs).

a. True

b. False

ANSWER: False
POINTS: 1
DIFFICULTY: Easy
REFERENCES: Implementations Of Collections
QUESTION TYPE: True / False

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22. In computer science, abstraction is used for ignoring or hiding details that are nonessential.

- a. True
- b. False

ANSWER: True

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Implementations Of Collections

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23. In Python, modules and methods are the smallest units of abstraction, classes are the next in size, and functions are the largest.

- a. True
- b. False

ANSWER: False

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Implementations Of Collections

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24. Without abstraction, you would need to consider all aspects of a software system simultaneously.

- a. True
- b. False

ANSWER: True

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Implementations Of Collections

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25. Python includes two implementations of lists: arrays and linked lists.

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- a. True
- b. False

ANSWER: False

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Implementations Of Collections

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26. What is a group of zero or more items that can be operated on as a unit?

- a. grouping
- b. collection
- c. array
- d. organization

ANSWER: b

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Collection Types

QUESTION TYPE: Multiple Choice

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27. Which of the following is true about Python collections?

- a. most can be heterogeneous
- b. all are homogeneous
- c. they are typically static
- d. all are immutable object types

ANSWER: a

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Collection Types

QUESTION TYPE: Multiple Choice

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28. Which object type is immutable?

- a. list

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- b. set
- c. dict
- d. tuple

ANSWER: d
POINTS: 1
DIFFICULTY: Easy
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29. Which type of collection is ordered by position?

- a. linear
- b. hierarchical
- c. graph
- d. sorted

ANSWER: a
POINTS: 1
DIFFICULTY: Easy
REFERENCES: Collection Types
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30. Which real-world item best represents a linear collection?

- a. file system
- b. organizational chart
- c. stack of bricks
- d. table of contents

ANSWER: c
POINTS: 1
DIFFICULTY: Easy
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31. Which real-world item best represents a hierarchical collection?

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- a. a queue of customers
- b. wiring diagrams
- c. a box of legos
- d. a family tree

ANSWER: d

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Collection Types

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32. Which statement is true about a sorted collection?

- a. must be ordered by position
- b. they need not be linear
- c. searching is inefficient
- d. a box of donuts is an example

ANSWER: b

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Collection Types

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33. Which of the following is an unordered collection?

- a. string
- b. stack
- c. dictionary
- d. queue

ANSWER: c

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Collection Types

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34. Which Python function returns the total number of items in a collection?

- a. sizeof
- b. len
- c. count
- d. total

ANSWER: b

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Operations On Collections

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35. Which operator can you use to test for item membership in a collection?

- a. in
- b. ==
- c. @
- d. is

ANSWER: a

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Operations On Collections

QUESTION TYPE: Multiple Choice

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36. What is the value of *c* after the following code executes?

```
a = [10, 20, 30]
```

```
b = [40, 50, 60]
```

```
c = a + b
```

- a. [50, 70, 90]
- b. {[10, 20, 30], [40, 50, 60]}
- c. [10, 20, 30, 40, 50, 60]
- d. ([10, 40], [20, 50], [30, 60])

ANSWER: c

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Operations On Collections

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37. Which of the following is a special case of type conversion, where the two collections are of the same type?

- a. replacing
- b. copying
- c. duplicating
- d. cloning

ANSWER: d

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Operations On Collections

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38. What is the value of *aList* after the following code is executed?

```
aList = [10, 20, 30]
aList.pop()
```

- a. [10, 20, 30]
- b. [10,20]
- c. []
- d. [20, 30]

ANSWER: b

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Operations On Collections

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39. What is the value of *aList* after the following code is executed?

```
aList = [1, 2, 3]
aList.remove(2)
```

- a. [1, 2]

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b. [1, 3]

c. [3]

d. [1]

ANSWER: b

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Operations On Collections

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40. What is the value of *myObject* after the following code executes?

```
yourObject = "Hi"  
myObject = tuple(yourObject)
```

a. ('H', 'i')

b. ["H", "i"]

c. (Hi)

d. ("Hi")

ANSWER: a

POINTS: 1

DIFFICULTY: Difficult

REFERENCES: Operations On Collections

QUESTION TYPE: Multiple Choice

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41. What is the value of *newList* after the following code executes?

```
newList = list(range(9, 0, -3))
```

a. [8, 5, 2]

b. [9, 6, 3, 0]

c. [9, 6, 3]

d. []

ANSWER: c

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Operations On Collections

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42. What is the value of *newObject* after the following code executes?

```
newObject = tuple("Hello")
```

- a. ('H', 'e', 'l', 'l', 'o')
- b. ["Hello"]
- c. ("Hello")
- d. ['H', 'e', 'l', 'l', 'o']

ANSWER: a

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Operations On Collections

QUESTION TYPE: Multiple Choice

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43. What is the value of *r* after the following code executes?

```
myList = [2, 3, 5, 7, 11]
yourList = list(myList)
r = yourList is myList
```

- a. [2, 3, 5, 7, 11]
- b. True
- c. None
- d. False

ANSWER: d

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Operations On Collections

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44. What is the value of *r* after the following code executes?

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```
mySet = {2, 3, 5, 7, 11}
yourSet = {5, 7, 2, 11, 3}
r = yourSet == mySet
```

- a. {5, 7, 2, 11, 3}
- b. True
- c. False
- d. 0

ANSWER: b
POINTS: 1
DIFFICULTY: Difficult
REFERENCES: Operations On Collections
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45. What can a programmer do to prevent side effects from cloning mutable objects?
- a. create a deep copy using a *for* loop
 - b. create a shallow copy using a type conversion
 - c. create a deep copy using a type conversion
 - d. use the assignment operator in stead of a type conversion

ANSWER: a
POINTS: 1
DIFFICULTY: Difficult
REFERENCES: Operations On Collections
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46. When a *for* loop is used to iterate over a collection, which statement is true?
- a. list items are visited from last to first
 - b. items in a list are visited in a random order
 - c. items in a sorted collection are visited in ascending order
 - d. items in a dictionary are visited in descending order

ANSWER: c
POINTS: 1
DIFFICULTY: Moderate
REFERENCES: Operations On Collections
QUESTION TYPE: Multiple Choice

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47. Which of the following lists Python units of abstraction from smallest to largest?
- a. classes, methods, functions, modules
 - b. functions, methods, classes, modules
 - c. modules, functions, methods, classes
 - d. modules, classes, methods, function

ANSWER: b

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Implementations Of Collections

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48. In what order are dictionary items visited during an iteration?
- a. the order in which they were added
 - b. ascending, by key value
 - c. descending, by item value
 - d. no particular order

ANSWER: d

POINTS: 1

DIFFICULTY: Moderate

REFERENCES: Operations On Collections

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49. Which operator is used to obtain a string representation of a collection?
- a. len
 - b. char
 - c. str
 - d. in

ANSWER: c

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Operations On Collections

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50. In which type of collection does each item have many predecessors and successors, called neighbors?

- a. linear
- b. hierarchical
- c. graph
- d. unordered

ANSWER: c

POINTS: 1

DIFFICULTY: Easy

REFERENCES: Collection Types

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