

dictionary ⑧.

8.12 Summary

- Tuple is an immutable data structure comprising of items that are ordered and heterogeneous.
- Tuples are formed using commas and not the parenthesis.
- Indexing and slicing of items are supported in tuples.
- Tuples support built-in functions such as `len()`, `min()`, and `max()`.
- The set stores a collection of unique values and are not placed in any particular order.
- Add an item to the set using `add()` method and remove an item from the set using the `remove()` method.
- The `for` loop is used to traverse the items in a set.
- The `issubset()` or `issuperset()` method is used to test whether a set is a superset or a subset of another set.
- Sets also provide functions such as `union()`, `intersection()`, `difference()`, and `symmetric_difference()`.

Multiple Choice Questions

1. Which of the following is a mutable type?
 - a. Strings
 - b. Lists
 - c. Tuples
 - d. Frozenset

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

```
t1 = (1, 2, 3, 4)
t1.append((5, 6, 7))
print(len(t1))
```

☒ a. Error

☐ b. 2

☐ c. 1

☐ d. 5

3. What is the correct syntax for creating a tuple?

☐ a. ["a", "b", "c"]

☒ b. ("a", "b", "c")

☐ c. ['a', 'b', 'c']

☐ d. ()

4. Assume `air_force = ("f15", "f22a", "f35a")`. Which of the following is incorrect?

☐ a. `print(air_force[2])`

☒ b. `air_force[2] = 42`

☐ c. `print(max(air_force))`

☐ d. `print(len(air_force))`

5. Gauge the output of the following code snippet.

```
bike = ('d', 'u', 'c', 'a', 't', 'i')
bike[1:3]
```

☒ a. ('u', 'c')

☐ b. ('u', 'c', 'c')

☐ c. ('d', 'u', 'c')

☐ d. ('a', 't', 'i')

6. What is the output of the following code?

```
colors = ("v", "i", "b", "g", "y", "o", "r")
for i in range(0, len(colors), 2):
    print(colors[i])
```

☐ a. ('i', 'b')

☐ b. ('v', 'i', 'b')

☒ c. ['v', 'b', 'y', 'r']

☐ d. ('i', 'g', 'o')

7. What is the output of the following code snippet?

```
colors = ("v", "i", "b", "g", "y", "o", "r")
2 * colors
```

☐ a. ['v', 'i', 'b', 'g', 'y', 'o', 'r']

☐ b. ('v', 'i', 'b', 'g', 'y', 'o', 'r')

☐ c. ('v', 'v', 'i', 'i', 'b', 'b', 'g', 'g', 'y', 'y', 'o', 'o', 'r', 'r')

☒ d. ('v', 'i', 'b', 'g', 'y', 'o', 'r', 'v', 'i', 'b', 'g', 'y', 'o', 'r')

8. Predict the output of the following code.

```
os = ('w', 'i', 'n', 'd', 'o', 'w', 's')  
osl = ('w', 'i', 'n', 'd', 'o', 'w', 's', 'o')  
os < osl
```

- ☒ True
- ☐ False
- c. 1
- d. 0

9. What is the data type of (3)?

- a. Tuple
- b. List
- c. None
- d. Integer

10. Assume tuple_1 = (7,8,9,10,11,12,13) then the output of tuple_1[1:-1] is.

- a. Error
- b. (8,9,10,11,12)
- c. [8,9,10,11,12]
- d. None

11. What might be the output of the following code:

```
A = ("hello") * 3  
print(A)
```

- a. Operator Error
- b. ('hello','hello','hello')
- ☒ c. 'hellohellohello'
- d. None of these

12. What is the output of the following code:

```
number_1 = {1,2,3,4,5}  
number_2 = {1,2,3}  
number_1.difference(number_2)
```

- ☒ a. {4, 5}
- b. {1, 2, 3}
- c. {4, 5}
- d. [4, 5]

13. Judge the output of the following code:

```
tuples = (7,8,9)  
sum(tuples, 2)
```

- ☒ a. 26
- b. 20
- c. 12
- d. 3

14. `tennis = ('steffi', 'monica', 'serena', 'monica', 'navratilova')`
`tennis.count('monica')`
- a. 3
 - b. 0
 - ☒ c. 2
 - d. 1
15. A set is an _____ collection with no _____ items.
- ☒ a. unordered, duplicate
 - b. ordered, unique
 - c. unordered, unique
 - d. ordered, duplicate
16. Judge the output of the following:
- ```
sets_1 = set(['a','b','b','c','c','c','d'])
len(sets_1)
```
- a. 1
  - ☒ b. 4
  - c. 5
  - d. 7
17. What is the output of the code shown below?
- ```
s = {1,2,3}  
s.update(4)  
print(s)
```
- a. {1,2,3,4}
 - b. {1,2}
 - c. {1,2,3}
 - ☒ d. Error
18. Tuple unpacking requires
- ☒ a. an equal number of variables on the left side to the number of items in the tuple.
 - b. greater number of variables on the left side to the number of items in the tuple.
 - c. less number of variables on the left side to the number of items in the tuple.
 - d. Does not require any variables.
19. The statement that is used to create an empty set is
- a. {}
 - ☒ b. set()
 - c. []
 - d. ()

20. The _____ functions removes the first element of the set
- a. remove()
 - b. delete()
 - c. ☒ pop()
 - d. truncate()
21. The method that returns a new set with items common to two sets is
- a. isdisjoint()
 - b. ☒ intersection()
 - c. symmetric_difference()
 - d. union()
22. What is the output of the following code snippet?
- ```
s1 = {'a','b','c'}
s2 = {'d'}
print(s1.union(s2))
```
- a. ☒ {'c', 'd', 'b', 'a'}
  - b. {'a', 'b', 'c', 'd'}
  - c. {'b', 'c', 'd', 'a'}
  - d. {'d', 'a', 'b', 'c'}
23. The function that makes a sequence by aggregating the elements from each of the iterables is
- a. remove()
  - b. update()
  - c. frozenset()
  - d. ☒ zip()
24. Predict the output of the following code:
- ```
even = {'2', '4', '6'}  
odd = {'1', '5', '7'}  
even.isdisjoint(odd)  
odd.isdisjoint(even)
```
- a. True False
 - b. False True
 - c. ☒ True True
 - d. False False
25. Which of the following code snippet returns symmetric difference between two sets
- a. ☒ $x \wedge y$
 - b. $x \& y$
 - c. $x | y$
 - d. $x - y$