

# Python Questions and Answers – Sets – 1

93.

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This set of Python Multiple Choice Questions & Answers (MCQs) focuses on “Sets – 1”.

1. Which of these about a set is not true?

- a) Mutable data type
- b) Allows duplicate values
- c) Data type with unordered values
- D) d) Immutable data type

A set is a mutable data type with non-duplicate, unordered values, providing the usual mathematical set op.

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2. Which of the following is not the correct syntax for creating a set?

- A
- a) set([[1,2],[3,4]])
  - b) set([1,2,2,3,4])
  - c) set((1,2,3,4))
  - d) {1,2,3,4}

→ the argument given for the set must be iterable.

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3. What will be the output of the following Python code?

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```
nums = set([1,1,2,3,3,3,4,4])
print(len(nums))
```

→ A set doesn't have duplicate items

(只包含非重複的)

- a) 7  
 b) Error, invalid syntax for formation of set  
**C C**  
 c) 4  
 d) 8

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4. What will be the output of the following Python code?

```
a = [5,5,6,7,7,7]
b = set(a)
def test(lst):
    if lst in b:
        return 1
    else:
        return 0
for i in filter(test, a):
    print(i,end=" ")
```

}

The filter function will return all the values from list a which are True. Since all the members of the set are not duplicate, all of the values return True.

- a) 5 5 6  
 b) 5 6 7  
**C C**  
 c) 5 5 6 7 7 7  
 d) 5 6 7 7 7

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5. Which of the following statements is used to create an empty set?

- B (a) {} → create dictionary  
 B (b) set() → create empty set.  
 c) []  
 d) ()

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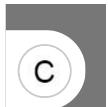
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6. What will be the output of the following Python code?

```
>>> a={5, 4}
>>> b={1, 2, 4, 5}
>>> a<b → returns True if a is a proper.
```

- B (a) {1,2}  
 B (b) True  
 c) False  
 d) Invalid operation

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- c) `a.remove(5)`  
d) `a[2]=45`

$a = \{5, 6, 7, 8\}$

The members of a set can be accessed by their index values since the elements of the set are unordered.

8. If `a={5,6,7}`, what happens when `a.add(5)` is executed?

- B. a) `a={5,5,6,7}`  
b) `a={5,6,7}`

- c) Error as there is no add function for set data type 但5是重复的，不是set。  
d) Error as 5 already exists in the set

There exists add method for set.

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9. What will be the output of the following Python code?

```
>>> a={4,5,6}
>>> b={2,8,6}
>>> a+b
```

- a) {4,5,6,2,8}  
b) {4,5,6,2,8,6}  
C c) Error as unsupported operand type for sets  
d) Error as the duplicate item 6 is present in both sets

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10. What will be the output of the following Python code?

```
>>> a={4,5,6}
>>> b={2,8,6}
>>> a-b
```

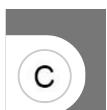
- A a) {4,5} - gives the set of elements  
b) {6} in set a but not in set b.  
c) Error as unsupported operand type for set data type  
d) Error as the duplicate item 6 is present in both sets

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11. What will be the output of the following Python code?

$\wedge$ : returns a set of elements in set A or set B, but not in both

```
>>> a={5,6,7,8}
>>> b={7,8,10,11} →
>>> a^b      {5,6,10,11}
```



d) {5,6,10,11}

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12. What will be the output of the following Python code?

`>>> s={5, 6}` → the multiplication operator isn't  
`>>> s*3` valid for the set.

A (a) Error as unsupported operand type for set data type

b) {5,6,5,6,5,6}

c) {5,6}

d) Error as multiplication creates duplicate elements which isn't allowed

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13. What will be the output of the following Python code?

`>>> a={5, 6, 7, 8}`  
`>>> b={7, 5, 6, 8}`  
`>>> a==b`

It is possible to compare 2 sets and  
the order of elements in both sets don't matter.  
If the values of the elements are the same.

A (a) True

b) False

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14. What will be the output of the following Python code?

`>>> a={3, 4, 5}`  
`>>> b={5, 6, 7}`  
`>>> a|b`

→ |: union.

B (a) Invalid operation

(b) {3, 4, 5, 6, 7}

c) {5}

d) {3,4,6,7}

produces a set of element in both A &amp; B.

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15. Is the following Python code valid?

```
a={3,4,{7,5}}
print(a[2][0])
```

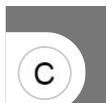
NO.

Error. subsets aren't allowed.

elements of a set must not be mutable

sets are mutable.

⇒ subsets can't exist.



# Python Questions and Answers – Sets – 2

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This set of Python Multiple Choice Questions & Answers (MCQs) focuses on “Sets – 2”.

1. Which of these about a frozenset is not true?

- A a) Mutable data type
- b) Allows duplicate values
- c) Data type with unordered values
- d) Immutable data type

must be an immutable data type.

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2. What is the syntax of the following Python code?

```
>>> a=frozenset(set([5,6,7]))  
>>> a
```

→ creating a frozenset.

- B a) {5,6,7}
- b) frozenset({5,6,7})
- c) Error, not possible to convert set into frozenset
- d) Syntax error

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3. Is the following Python code valid?

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```
>>> a=frozenset([5,6,7])  
>>> a  
>>> a.add(5)      —————→ add method doesn't exist
```

- a) Yes, now a is {5,5,6,7}      for frozen method.  
B. (b) No, frozen set is immutable  
c) No, invalid syntax for add method  
d) Yes, now a is {5,6,7}

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4. Set members must not be hashable.

✗ True

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Q4. Set members must always be hashable.

```
>>> a={3, 4, 5}
>>> a.update([1, 2, 3]) → update: adds elements to a set.
>>> a
```

- a) Error, no method called update for set data type  
**B** b) {1, 2, 3, 4, 5}  
 c) Error, list can't be added to set  
 d) Error, duplicate item present in list

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6. What will be the output of the following Python code?

```
>>> a={1, 2, 3}
>>> a.intersection_update({2, 3, 4, 5})
>>> a
```

↳ returns a set which is an intersection

- A** a) {2,3}  
 b) Error, duplicate item present in list  
 c) Error, no method called intersection\_update for set data type  
 d) {1,4,5}

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7. What will be the output of the following Python code?



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- C  
 a) {1,2,3}  
 b) Error, copying of sets isn't allowed  
 c) {1,2}  
 d) Error, invalid syntax for remove

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*Any change made in B is reflected in A, because b is an alias of A.*

8. What will be the output of the following Python code?

```
>>> a={1,2,3}
>>> b=a.copy() → B is a copy but not an alias of A.
>>> b.add(4)
>>> a
```

*Hence any change made in B isn't reflected in A.*

A  
 a) {1,2,3}

- b) Error, invalid syntax for add  
 c) {1,2,3,4}  
 d) Error, copying of sets isn't allowed

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9. What will be the output of the following Python code?

```
>>> a={1,2,3}
>>> b=a.add(4) → add returns nothing.
>>> b
```

- a) 0  
 b) {1,2,3,4}  
 c) {1,2,3}  
 D  
 d) Nothing is printed

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10. What will be the output of the following Python code?

```
>>> a={1,2,3}
>>> b=frozenset([3,4,5])
>>> a-b
```

*gives the set of elements in A but not in B.*

A  
 a) {1,2}

- b) Error as difference between a set and frozenset can't be found out  
 ☗ Error as unsupported operand type for set data type

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```
>>> a={5, 6, 7}
>>> sum(a, 5)
```

$$5+6+7 = 18$$

$$\hookrightarrow \text{sum}(a) + 5.$$

- B** a) 5  
b) 23  
c) 18

d) Invalid syntax for sum method, too many arguments

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12. What will be the output of the following Python code?

```
>>> a={1, 2, 3}
>>> {x*2 for x in a|{4, 5}}
```

→ set comprehensions are allowed.

- a) {2,4,6}  
b) Error, set comprehensions aren't allowed **X**  
**C** c) {8, 2, 10, 4, 6}  
d) {8,10}

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13. What will be the output of the following Python code?

```
>>> a={5, 6, 7, 8}
>>> b={7, 8, 9, 10}
>>> len(a+b)
```

duplicated elements in (a+b) is eliminated  
and then compute length of (a+b)

- B** a) 8  
b) Error, unsupported operand '+' for sets  
c) 6  
d) Nothing is displayed

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14. What will be the output of the following Python code?

```
a={1, 2, 3}
b={1, 2, 3}
c=a.issubset(b)
print(c)
```

→ returns True if B is a  
proper subset of A.

- A** a) True

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15. Is the following Python code valid?

```
a={1,2,3}
b={1,2,3,4}      → a 不是 b 的 superset .
c=a.issuperset(b)
print(c)
```

A 0

- a) False
- b) True
- c) Syntax error for issuperset() method
- d) Error, no method called issuperset() exists

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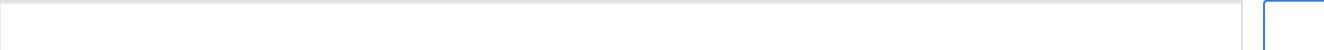
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# Python Questions and Answers – Sets – 3

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

```
s=set()  
type(s)
```

- B  
a) <'set'>  
b) <class 'set'>  
c) set  
d) class set

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`s={2, 3, 4, [5, 6]}`

Error.

- A  a) True  
b) False

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hashing: each item in the set should be hashable.  
 ↳ immutable.  
 list is mutable } → result in an error.

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3. Set makes use of keys

Dictionary makes use of (key, value)

- a) keys, keys  
 b) key values, keys  
 C c) keys, key values  
 d) key values, key values

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4. Which of the following lines of code will result in an error?

- a) `s={abs}` → 'abs' is a built-in function  
 b) `s={4, 'abc', (1,2)}`  
 c) `s={2, 2.2, 3, 'xyz'}` } → all items are hashable.  
 D d) `s={san}` → 'san' is not defined

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s={2, 5, 6, 6, 7}

s

- B  b) {2, 5, 6, 7} → no duplicate elements.  
 只保留一个不重复的.  
 c) {2, 5, 6, 6, 7}  
 d) Error

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6. Input order is preserved in sets.

- B  b) False  
 The input order in sets is not maintained.  
 (set 没有顺序!)

7. Write a list comprehension for number and its cube for:

l=[1, 2, 3, 4, 5, 6, 7, 8, 9]

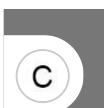
- A  a) [x\*\*3 for x in l]  
 b) [x^3 for x in l]  
 c) [x\*\*3 in l]  
 d) [x^3 in l]

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8. What will be the output of the following Python code?

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s

$$S = \{1, 2, 3\}$$

s.update(4)

$\Rightarrow s.update([4])$  ✓.

- a) {1, 2, 3, 4}
- b) {1, 2, 4, 3}
- c) {4, 1, 2, 3}
- d) Error

↳ the argument given to function  
should be iterable.

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(异质, mixed type)

9. Which of the following functions cannot be used on heterogeneous sets?

- a) pop
- b) remove
- c) update
- d) sum

• sum / min / max cannot be used on mixed type.  
• pop / remove / update can.

here set: {'abc', 4, (1,2)}, 类型不同.

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10. What will be the output of the following Python code?

s={4>3, 0, 3>3}  
all(s) — F  
any(s) — T

all(): returns T only if all the condition  
given are T. (True OR False)

a)

any(): returns T if one condition is T.

True  
False

b)

False  
True

c)

True  
True

d)

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