

TECH
PROFESSIONAL

1st edition
2023

**Python
learning
with codes
Questions
and
Answers**

Phython learning with codes
Questions and Answers

First edition 2023
By Tech Professional

What will be the value of the i variable when the while e loop finishes its execution?

```
i=0
while i !=0:
    i=i-1
else:
    i=i+1
```

- A. 1
- B. 0
- C. 2
- D. the variable becomes unavailable

Select the true statement about composition.

- A. Composition extends a class's capabilities by adding new components and modifying the existing ones
- B. Composition allows a class to be projected as a container of different classes
- C. Composition is a concept that promotes code reusability, while Inheritance promotes encapsulation
- D. Composition is based on the has a relation, so it cannot be used together with inheritance

Correct Answer: B

Analyze the following snippet and select the statement that best describes it.

```
Class OwnMath:  
    Pass
```

```
def calculate _ value (numerator, denominator) :  
    try :  
        value = numerator / denominator  
    except ZeroDivisionError as e :  
        raise OwnMath from e  
    return value  
calculate _ value (4, 0)
```

- A. The code is an example of implicitly chained exceptions.
- B. The code is erroneous as the OwnMath class does not inherit from any Exception type class
- C. The code is fine and the script execution is not interrupted by any exception.
- D. The code is an example of explicitly chained exceptions

Correct Answer: A

Analyze the following snippet and select the statement that best describes it.

```
Class Sword:  
    Var1 = 'weapon'
```

```
Def __init__(self) :  
    self.name = 'Excalibur'
```

- A. self.name is the name of a class variable
- B. var1 is the name of a global variable
- C. Excalibur is the value passed to an instance variable
- D. weapon is the value passed to an instance variable

Correct Answer: C

The following snippet represents one of the OOP pillars. Which one is that?

Class A:

```
def run(self):  
    Print ("A is running")
```

Class B:

```
def fly (self ) :  
    print (" B is flying")
```

Class C:

```
def run (self ) :  
    print (" C is running")
```

```
for element in A () , B () , C ()  
    element . run ()
```

- A. Serialization
- B. Inheritance
- C. Encapsulation
- D. Polymorphism

Correct Answer: D

Analyze the following function and choose the statement that best describes it.

```
def my_decorator (coating):  
    def level1_wrapper (my_function):  
        def level2_wrapper (*args)  
            our_function (*args)  
            return level2_wrapper  
        return level1_wrapper
```

- A. It is an example of a decorator that accepts its own arguments.
- B. It is an example of decorator stacking.
- C. It is an example of a decorator that can trigger an infinite recursion
- D. The function is erroneous.

Correct Answer: A

```
def f1 (*arg, **args) :  
    pass
```

Analyze the following snippet and select the statement that best describes it.

- A. The code is syntactically correct despite the fact that the names of the function parameters do not follow the naming convention
- B. The `*arg` parameter holds a list of unnamed parameters.
- C. The code is missing a placeholder for unnamed parameters.
- D. The code is syntactically incorrect - the function should be defined as `def f1 (*args, **kwargs):`

Correct Answer: D

Analyze the following snippet and decide whether the code is correct and/or which method should be distinguished as a class method.

```
class Crossword:
    number_of_Crosswords = 0

    def __init__(self, height, width):
        self.height = height
        self.width = width
        self.progress = 0

    @staticmethod
    def isElementCorrect(word):
        if self.isSolved():
            print('The crossword is already solved')
            return True
        result = True
        for char in word:
            if char.isdigit():
                result = False
                break
        return result

    def isSolved(self):
        if self.progress == 100
            return True

    def getNumberOfCrosswords(cls):
        return cls.number_of_Crosswords
```

- A. There is only one initializer, so there is no need for a class method
- B. The `getNumberOfCrosswords()` method Should be decorated with `@classmethod`
- C. The code is erroneous
- D. The `getNumberOfCrosswords()` and `isSolved` methods should be decorated with `@classmethod`

Correct Answer: B

Analyze the code and choose the best statement that describes it.

```
class Item:  
    def __init__(self, initial_value)  
        self.value = initial_value  
  
    def __ne__(self, other):  
        ...
```

- A. `ne_()` is not a built-in special method.
- B. The code is erroneous
- C. The code is responsible for the support of the negation operator, e.g. `a = - a`
- D. The code is responsible for the support of the inequality operator, i.e. `!=`

Correct Answer: *D*

And operator able to perform bitwise shifts is coded as (Choose two.)

- A. `--`
- B. `++`
- C. `<<`
- D. `>>`

Correct Answer: *CD*

What will the value of the `i` variable be when the following loop finishes its execution?

```
for i in range (10):  
    pass
```

- A. 10
- B. the variable becomes unavailable
- C. 11
- D. 9

Correct Answer: B

The following expression -

- A. equal to 1
- B. invalid
- C. equal to 2
- D. equal to -1

Correct Answer: *D*

A compiler is a program designed to (Choose two.)

- A. rearrange the source code to make it clearer
- B. check the source code in order to see if it's correct
- C. execute the source code
- D. translate the source code into machine code

Correct Answer: *BD*

What is the output of the following piece of code?

```
a= 'ant'  
b= "bat"  
c= 'camel'  
print (a, b, c, sep= "")
```

- A. ant' bat' camel
- B. ant\x07bat\x07 camel
- C. antbatcamel
- D. print (a, b, c, sep= ' \x07 ')

Correct Answer: B

What is the expected output of the following snippet?

```
i=5
while i>0:
    i=i //2
    if i % 2==0:
        break
    else:
        i+=1
    print (i)
```

- A. the code is erroneous
- B. 3
- C. 7
- D. 15

Correct Answer: A

How many lines does the following snippet output?

```
for i in range (1, 3):  
    print ("*", end="")  
else:  
    print ("*")
```

- A. three
- B. one
- C. two
- D. four

Correct Answer: B

Which of the following literals reflect the value given as 34.23? (Choose two.)

- A. .3423e2
- B. 3423e-2
- C. .3423e-2
- D. 3423e2

Correct Answer: AB

What is the expected output of the following snippet?

```
a=2
if a>0:
    a+=1
else:
    a-=1
print(a)
```

- A. 3
- B. 1
- C. 2
- D. the code is erroneous

Correct Answer: A

Assuming that the following snippet has been successfully executed, which of the equations are True? (Choose two.)

```
a=[1]  
b=a  
a[0] = 0
```

- A. `len(a) == len (b)`
- B. `b [0] +1 ==a [0]`
- C. `a [0] == b [0]`
- D. `a [0] + 1 ==b [0]`

Correct Answer: AC

Assuming that the following snippet has been successfully executed, which of the equations are False? (Choose two.)

- A. `len(a)== len (b)`
- B. `a [0]-1 ==b [0]`
- C. `a [0]== b [0]`
- D. `b [0] - 1 ==a [0]`

Correct Answer: AB

Which of the following statements are true? (Choose two.)

- A. Python strings are actually lists
- B. Python strings can be concatenated
- C. Python strings can be sliced like lists
- D. Python strings are mutable

Correct Answer: BC

Which of the following sentences are true? (Choose two.)

- A. Lists may not be stored inside tuples
- B. Tuples may be stored inside lists
- C. Tuples may not be stored inside tuples
- D. Lists may be stored inside lists

Correct Answer: *BD*

Assuming that `String` is six or more letters long, the following slice
`string[1:-2]`

is shorter than the original string by:

- A. four chars
- B. three chars
- C. one char
- D. two chars

Correct Answer: *B*

```
lst = [1,2,3,4]
lst = lst [-3:-2]
lst= lst[-1]
print (lst)|
```

What is the expected output of the following snippet?

- A. 1
- B. 4
- C. 2
- D. 3

Correct Answer: C

Which of the following statements are true? (Choose two.)

- A. Python strings are actually lists
- B. Python strings can be concatenated
- C. Python strings can be sliced like lists
- D. Python strings are mutable

Correct Answer: *BC*

Which of the following sentences are true? (Choose two.)

- A. Lists may not be stored inside tuples
- B. Tuples may be stored inside lists
- C. Tuples may not be stored inside tuples
- D. Lists may be stored inside lists

Correct Answer: *BD*

What is the expected output of the following snippet?

```
s= 'abc'  
for i in len(s):  
    s[i] = s[i].upper ()  
print(s)
```

- A. abc
- B. The code will cause a runtime exception
- C. ABC
- D. 123

Correct Answer: B

How many elements will the list2 list contain after execution of the following snippet?

```
list1 = [False for i in range (1, 10) ]  
list2 = list1 [-1:1:-1]
```

- A. zero
- B. five
- C. seven
- D. three

Correct Answer: C

What would you use instead of XXX if you want to check whether a certain 'key' exists in a dictionary called dict? (Choose two.)

if XXX:

```
    print  Key exists
```

- A. 'key' in dict
- B. dict ['key'] != None
- C. dict.exists ('key')
- D. 'key' in dict.keys ()

Correct Answer: *BD*

You need data which can act as a simple telephone directory. You can obtain it with the following clauses (Choose two.) (assume that no other items have been created before)

- A. dir={'Mom': 5551234567, 'Dad': 5557654321}
- B. dir= {'Mom': '5551234567', 'Dad': '5557654321'}
- C. dir= {Mom: 5551234567, Dad: 5557654321}
- D. dir= {Mom: '5551234567', Dad: '5557654321'}

Correct Answer: *CD*

What can you do if you don't like a long package path like this one?

```
import alpha .beta .gamma .delta .epsilon .zeta
```

- A. you can make an alias for the name using the alias keyword
- B. nothing, you need to come to terms with it
- C. you can shorten it to alpha . zeta and Python will find the proper connection
- D. you can make an alias for the name using the as keyword

Correct Answer: D

What is the expected output of the following code?

```
str = 'abcdef'
```

```
def fun (s) :
```

```
    del s [2]
```

```
    return s
```

```
print (fun (str) )
```

- A. abcef
- B. The program will cause a runtime exception/error
- C. acdef
- D. abdef

Correct Answer: B

What is the expected output of the following code

```
def f (n) :  
    if n == 1:  
        return '1'  
    return str (n) + f (n-1)  
  
print (f (2) )
```

- A. 21
- B. 2
- C. 3
- D. 12

Correct Answer: A

What is the expected behavior of the following snippet?

```
def x( ):          # line 01
    return 2        # line 02
```

```
x= 1 + x ( )    # line 03
print (x)        # line 04
```

It will:

- A. cause a runtime exception on line 02
- B. cause a runtime exception on line 01
- C. cause a runtime exception on line 03
- D. print 3

Correct Answer: D

What is the expected behavior of the following code?

```
def f (n):  
    for i in range (1, n+1) :  
        yield I
```

```
print (f(2) )
```

It will:

- A. print 4321
- B. print <generator object f at (some hex digits)>
- C. cause a runtime exception
- D. print 1234

Correct Answer: B

If you need a function that does nothing, what would you use instead of XXX? (Choose two.)

```
def idler():  
    XXX
```

- A. pass
- B. return
- C. exit
- D. None

Correct Answer: AD

Is it possible to safely check if a class/object has a certain attribute?

- A. yes, by using the `hasattr` attribute
- B. yes, by using the `hasattr()` method
- C. yes, by using the `hassattr()` function
- D. no, it is not possible

Correct Answer: B

The first parameter of each method:

- A. holds a reference to the currently processed object
- B. is always set to `None`
- C. is set to a unique random value
- D. is set by the first argument's value

Correct Answer: D

The simplest possible class definition in Python can be expressed as:

- A. class X:
- B. class X: pass
- C. class X: return
- D. class X: { }

Correct Answer: A

If you want to access an exception object's components and store them in an object called e, you have to use the following form of exception statement:

- A. except Exception (e) :
- B. except e= Exception :
- C. except Exception as e:
- D. such an action is not possible in Python

Correct Answer: C

A variable stored separately in every object is called:

- A. there are no such variables, all variables are shared among objects
- B. a class variable
- C. an object variable
- D. an instance variable

Correct Answer: D

There is a stream named s open for writing. What option will you select to write a line to the stream?

- A. s. write (Hello\n)
- B. write (s, Hello)
- C. s.writeln (Hello)
- D. s. writeline (Hello)

Correct Answer: A

You are going to read just one character from a stream called `s`. Which statement would you use?

- A. `ch = read (s, 1)`
- B. `ch= s.input (1)`
- C. `ch= input (s, 1)`
- D. `ch= s.read (1)`

Correct Answer: D

What can you deduce from the following statement? (Choose two.)

`str= open ('file.txt', 'rt')`

- A. `str` is a string read in from the file named `file.txt`
- B. a newline character translation will be performed during the reads
- C. if `file.txt` does not exist, it will be created
- D. the opened file cannot be written with the use of the `str` variable

Correct Answer: AD

The following class hierarchy is given. What is the expected output of the code?

class A:

```
    def a (self) :  
        print ("A", end= ' ')  
    def b (self) :  
        self.a ( )
```

class B (A):

```
    def a (self) :  
        print ("B", end= ' ')  
    def do (self):  
        self.b ( )
```

class C (A):

```
    def a (self):  
        print ("C", end= ' ')  
    def do (self):  
        self.b ( )
```

B () . do ()

C () . do ()

- A. BB
- B. CC
- C. AA
- D. BC

Correct Answer: D

Python's built in function named `open ()` tries to open a file and returns:

- A. an integer value identifying an opened file
- B. an error code (0 means success)
- C. a stream object
- D. always None

Correct Answer: C

Which of the following words can be used as a variable name? (Choose two.)

- A. for
- B. True
- C. true
- D. For

Correct Answer: CD

Python strings can be 'glued' together using the operator:

- A. .
- B. &
- C. _
- D. +

Correct Answer: D

A keyword (Choose two.)

- A. can be used as an identifier
- B. is defined by Python's lexis
- C. is also known as a reserved word
- D. cannot be used in the user's code

Correct Answer: BC

How many stars (*) does the snippet print?

```
s = '*****'  
s = s - s [2]  
print (s)
```

- A. the code is erroneous
- B. five
- C. four
- D. two

Correct Answer: A

Which line can be used instead of the comment to cause the snippet to produce the following expected output? (Choose two.)

Expected output:

1 2 3

Code:

```
c, b, a = 1, 3, 2
# put line here
print (a, b, c)
```

- A. c, b, a = b, a, c
- B. c, b, a = a, c, b
- C. a, b, c = c, a, b
- D. a, b, c = a, b, c

Correct Answer: AC

Assuming that the V variable holds an integer value to 2, which of the following operators should be used instead of OPER to make the expression equal to 1?

V OPER 1 -

- A. <<<
- B. >>>
- C. >>
- D. <<

Correct Answer: C

How many stars (*) does the following snippet print?

```
i = 3
while i > 0 :
    i -= 1
    print ("*")
else:
    print ("*")
```

- A. the code is erroneous
- B. five
- C. three
- D. four

Correct Answer: D

UNICODE is:

- A. the name of an operating system
- B. a standard for encoding and handling texts
- C. the name of a programming language
- D. the name of a text processor

Correct Answer: B

What is the expected output of the following snippet?

```
s = '*' - '*'  
s = 2*s + s**2  
print (s)
```

- A. * - ** - ** - ** - *
- B. * - ** - ** - ** - ** - ** - ** - *
- C. * - *
- D. * - ** - *

Correct Answer: A

Which of the listed actions can be applied to the following tuple? (Choose two.)

```
tup = ()
```

- A. tup [:]
- B. tup.append (0)
- C. tup [0]
- D. del tup

Correct Answer: AD

Executing the following snippet –

```
dct = { 'pi' : 3.14}  
dct ['pi'] = 3.1415
```

will cause the dct:

- A. to hold two keys named 'pi' linked to 3.14 and 3.1415 respectively
- B. to hold two key named 'pi' linked to 3.14 and 3.1415
- C. to hold one key named 'pi' linked to 3.1415
- D. to hold two keys named 'pi' linked to 3.1415

Correct Answer: C

How many elements will the list1 list contain after execution of the following snippet?

```
List1 = "don't think twice, do it!".split(',')
```

- A. two
- B. zero
- C. one
- D. three

Correct Answer: A

Which of the equations are True? (Choose two.)

- A. `chr (ord (x)) == x`
- B. `ord (ord (x)) == x`
- C. `chr (chr (x)) == x`
- D. `ord (chr (x)) == x`

Correct Answer: AD

If you want to transform a string into a list of words, what invocation would you use?
(Choose two.)

Expected output:

The, Catcher, in, the Rye,

Code:

```
s = "The Catcher in the Rye"  
l = # put a proper invocation here  
for w in l:  
    print (w, end=',') # outputs: The, Catcher, in, the Rye,
```

- A. `s.split()`
- B. `split(s, ' ')`
- C. `s.split(' ')`
- D. `split(s)`

Correct Answer: AC

is a four-element list is there any difference between these two statements?

```
del 1st # the first line  
del 1st[:] # the second line
```

- A. yes, there is, the first line empties the list, the second line deletes the list as a whole
- B. yes, there is, the first line deletes the list as a whole, the second line just empties the list
- C. no, there is no difference
- D. yes, there is, the first line deletes the list as a whole, the second line removes all the elements except the first one

Correct Answer: B

What should you put instead of XXX to print out the module name?

```
If     name    ! = "XXX":  
    print (    name    )
```

- A. main
- B. main
- C. main
- D. main

Correct Answer: C

Files with the suffix .pyc contain:

- A. Python 4 source code
- B. backups
- C. temporary data
- D. semi-compiled Python code

Correct Answer: D

Package source directories/folders can be:

- A. converted into the so-called pypck format
- B. packed as a ZIP file and distributed as one file
- C. rebuilt to a flat form and distributed as one directory/folder
- D. removed as Python compiles them into an internal portable format

Correct Answer: B

What can you deduce from the line below? (Choose two.)

```
x = a.b.c.f ()
```

- A. import a.b.c should be placed before that line
- B. f () is located in subpackage c of subpackage b of package a
- C. the line is incorrect
- D. the function being invoked is called a.b.c.f ()

Correct Answer: AC

A two-parameter lambda function raising its first parameter to the power of the second parameter should be declared as:

- A. `lambda (x, y) = x ** y`
- B. `lambda (x, y): x ** y`
- C. `def lambda (x, y): return x ** y`
- D. `lambda x, y: x ** y`

Correct Answer: D

What is the expected output of the following code?

```
def f (n):  
if n == 1:  
return 1  
return n + f (n-1)  
print (f(2))
```

- A. 21
- B. 12
- C. 3
- D. none

Correct Answer: C

A method for passing the arguments used by the following snippet is called:

```
def fun (a, b):  
    return a + b  
  
res = fun (1, 2)
```

- A. sequential
- B. named
- C. positional
- D. keyword

Correct Answer: C

What is the expected behavior of the following code?

```
def f(n):  
    for i in range (1, n+1):  
        yield i  
  
for i in f (2):  
    print (i, end= ' ')
```

It will -

- A. print 2 1
- B. print 1 2
- C. cause a runtime exception
- D. print <generator object f at (some hex digits)>

Correct Answer: B

What is the expected output of the following code?

```
1st = [x for x in range (5)]
1st = list (filter (lambda x: x % 2 == 0, 1st))
print (len(1st))
```

- A. 2
- B. The code will cause a runtime exception
- C. 1
- D. 3

Correct Answer: D

What is the expected behavior of the following code?

```
def unclear (x):  
    if x % 2 == 1:  
        return 0  
  
print (unclear (1) + unclear (2))
```

It will:

- A. print 0
- B. cause a runtime exception
- C. prints 3
- D. p

Correct Answer: B

If any of a class's components has a name that starts with two underscores (____), then:

- A. the class component's name will be mangled
- B. the class component has to be an instance variable
- C. the class component has to be a class variable
- D. the class component has to be a method

Correct Answer: A

If you need to serve two different exceptions called Ex1 and Ex2 in one except branch, you can write:

- A. except Ex1 Ex2:
- B. except (ex1, Ex2):
- C. except Ex1, Ex2:
- D. except Ex1+Ex2:

Correct Answer: B

A function called `issubclass` (`c1, c2`) is able to check if:

- A. `c1` and `c2` are both subclasses of the same superclass
- B. `c2` is a subclass of `c1`
- C. `c1` is a subclass of `c2`
- D. `c1` and `c2` are not subclasses of the same superclass

Correct Answer: C

Which function or operator should you use to obtain the answer True or False to the question "Do two variables refer to the same object?"

- A. The `==` operator
- B. The `isinstance()` function
- C. The `id()` function
- D. The `is` function

Correct Answer: D

Which sentence about the `@property` decorator is false?

- A. The `@property` decorator should be defined after the method that is responsible for setting an encapsulated attribute.
- B. The `@property` decorator designates a method which is responsible for returning an attribute value.
- C. The `@property` decorator marks the method whose name will be used as the name of the instance attribute.
- D. The `@property` decorator should be defined before the methods that are responsible for setting and deleting an encapsulated attribute.

Correct Answer: C

Select the true statement about the `__name__` attribute.

- A. `__name__` is a special attribute, which is inherent for both classes and instances, and it contains information about the class to which a class instance belongs.
- B. `__name__` is a special attribute, which is inherent for both classes and instances, and it contains a dictionary of object attributes.
- C. `__name__` is a special attribute, which is inherent for classes, and it contains information about the class to which a class instance belongs.
- D. `__name__` is a special attribute, which is inherent for classes, and it contains the name of a class.

Correct Answer: D

What is a static method?

- A. A method that works on the class itself
- B. A method decorated with the `@method` trait
- C. A method that requires no parameters referring to the class itself
- D. A method that works on class objects that are instantiated

Correct Answer: C

What is true about type in the object-oriented programming sense?

- A. It is the bottommost type that any object can inherit from.
- B. It is a built-in method that allows enumeration of composite objects
- C. It is the topmost type that any class can inherit from.
- D. It is an object used to instantiate a class.

Correct Answer: C

What does the term deserialization mean? (Choose the best answer.)

- A. It is a process of creating Python objects based on sequences of bytes
- B. It is a process of assigning unique identifiers to every newly created Python object
- C. It is another name for the data transmission process
- D. It is a process of converting the structure of an object into a stream of bytes

Correct Answer: D

What is a `__traceback__`? (Choose two.)

- A. An attribute owned by every exception object
- B. A special method delivered by the traceback module to retrieve a full list of strings describing the traceback
- C. An attribute that is added to every object when the traceback module is imported
- D. An attribute that holds interesting information that is particularly useful when the programmer wants to store exception details in other objects

Correct Answer: AD

Which of the following examples using line breaks and different indentation methods are compliant with PEP 8 recommendations? (Choose two.)

A.

```
spam = my_function(arg_one, arg_two,  
                    arg_three, arg_four)
```

B.

```
eggs = (1, 2, 3,  
        4, 5, 6)
```

C.

```
my_list = [  
    1, 2, 3,  
    4, 5, 6,  
]
```

D.

```
foo = my_function  
(  
    arg_one, arg_two,  
    arg_three, arg_four  
)
```

Correct Answer: CD

Look at the following examples of comments and docstrings in Python. Select the ones that are useful and compliant with PEP 8 recommendations. (Choose two.)

A.

```
def area_price(area, price=1.25):  
    """Calculate the area in square meters.  
    Keyword arguments:  
    area -- the land area of the slot  
    price -- price per sq/m (default 1.25)"""  
    ...
```

B.

```
def area_price(area, price=2.25):  
    """Calculate the area in square meters.  
  
    Keyword arguments:  
        area -- the land area of the slot  
        price -- price per sq/m (default 2.25)"""
```

...

```
# Example that illustrates creating  
# a two-element list, and printing  
# the list contents to the screen.
```

```
my_list = [a, b]  
c.    print(my_list)
```

- D. `price = price + 1 # Decrement price by one to compensate for loss.`

Correct Answer: AB

Select the true statement related to PEP 257.

- A. String literals that occur immediately after another docstring are called attribute docstrings
- B. Attribute docstrings and Additional docstrings are two types of extra docstrings that can be extracted by software tools
- C. String literals that occur in places other than the first statement in a module, function, or class definition can act as documentation. They are recognized by the Python bytecode compiler, and are accessible as runtime object attributes.
- D. String literals that occur immediately after a simple assignment at the top level of a module are called complementary docstrings

Correct Answer: C

Select the true statements related to PEP 8 programming recommendations for code writing. (Choose two.)

- A. You should use the `not ... is` operator (e.g. `if not spam is None:`), rather than the `is not` operator (e.g. `if spam is not None:`), to increase readability.
- B. You should make object type comparisons using the `isinstance()` method (e.g. `if isinstance(obj, int):`) instead of comparing types directly (e.g. `if type(obj) is type(1)`).
- C. You should write code in a way that favors the CPython implementation over PyPy, Cython, and Jython.
- D. You should not write string literals that rely on significant trailing whitespaces, as they may be visually indistinguishable, and certain editors may trim them.

Correct Answer: BD