Python cơ bản - Bài luyện tập

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Question 1: Which is the output of the following program?

```python
n = 0
for i in range(0, 1000, 100):
  n =+ i
print(n)
```

a) 900 (print out an integer 900)
b) 4500 (print out an integer 4500)
c) None (print out the keyword None)
d) Raise an error (the program throws an error)
e) None of the above

Question 2: Which is the output of the following program?

```python
def a_function_helper(x):
  if x > 0:
    return 'pos'
  else:
    return 'neg'

def a_function(data):
  res = [a_function_helper(x) for x in data]
  return res
data = [1, 0, -1, 2]
print(a_function(data))
```

a) ['pos', 'neg', 'pos', 'neg']
b) ['pos', 'neg', 'neg', 'pos']
c) ['neg', 'pos', 'neg', 'pos']
d) ['pos', 'neg', 'pos', 'neg']
e) None of the above

Question 3: Which is the output of the following program?

```python
data = "Python Programming"
print(data.split()[0])
```

a) Python
b) Programming
c) Python Programming
d) Raise an error
e) None of the above

Question 4: Which is the output of the following program?

```
"elephant"*1 > "ant"*100
```

a) True
b) False
c) Raise an error
d) None of the above

Question 5: Which is the output of the following program?

```
def my_function(signal):
    var = True
    while var:
        var = False
        for i in range(len(signal) - 1):
            if signal[i] > signal[i + 1]:
                signal[i], signal[i + 1] = signal[i + 1], signal[i]
                var = True

my_signal = [1, 0, 0, 1, 1, 1]
my_function(my_signal)
print(my_signal))
```

a) [0, 0, 0, 0, 0, 0]
b) [1, 1, 1, 1, 0, 0]
c) [0, 0, 1, 1, 1, 1]
d) None
e) None of the above

Question 6: Which is the output of the following program?

```
n = 0
for i in range(10):
    n += i
    if n>0 and n%2 == 0:
        break
print(n)
```

a) 0
b) 3
c) Raise an error
d) 6
e) None of the above

Question 7: Which is the output of the following program?

```
def my_function(list_nums = [1, 2, 3, 4]):
    var = 0
    for i in list_nums:
        var += i
    return var/len(list_nums)

my_function()
```

a) 2.5
b) 1.5
c) Raise an error

d) A and C

e) None of the above

Question 8: Which is the output of the following program?

```
space1 = "It's sunny here!"
space2 = "Is it hot here in the spring?"
space = space1 + space2
print(space[-7:-1])
```

a) spring

b) *SyntaxError*: invalid syntax

c) here!

d) spring?

e) None of the above

Question 9: Which is the output of the following program?

```
data = [1, 2, 3, "I", "am", "AI"]
new_data = sorted(data)
print(new_data)
```

a) ["I", "am", "AI", 1, 2, 3]

b) ["AI", "am", "I", 3, 2, 1]

c) ["1", "2", "3", "I", "am", "AI"]

d) *TypeError*: $'<'$ not supported between instances of $'str'$ and $'int'$

e) None of the above

Question 10: Which is the output of the following program?

```
my_string = "Duo, come here!"

my_bag_of_word = []
for element in my_string:
  if element not in my_bag_of_word:
    my_bag_of_word.append(element)
print(my_bag_of_word)
```

a) ['Duo', ',', ' ', 'c', 'm', 'e', 'h', 'r']

b) ['Duo, come here!']

c) IndentationError

d) ['D', 'u', 'o', ',', ' ', 'c', 'm', 'e', 'h', 'r', '!']

e) None of the above

Question 11: Which is the output of the following program?

```
my_string = "It's raining cats and dogs"
results = my_string.count('s')

print(results)
```

a) Raise an error

b) 2

c) 3

d) ['It', 'raining', 'cat', 'and', 'dog']

e) None of the above

Question 12: Which is the output of the following program?

```
def my_function(x):
  for i in range(x):
    for j in range(x):
      if i == j:
        print("1 ", end=" ")
      else:
        print("0 ", end=" ")
    print()

my_function(3)
```

a)
1 0 0
0 1 0
0 0 1
b)
0 1 1
1 0 1
1 1 0
c) [1, 0, 0], [0, 1, 0], [0, 0, 1]
d) None
e) None of the above

Question 13: Which is the output of the following program?

```
def my_function(y):
  var = 1
  while(y > 1):
    var = var * y
    y = y - 1
  return var

print(my_function(3))
```

a) 6
b) 7
c) 8
d) Raise an error
e) None of the above

Question 14: Which is the output of the following program?

```
even_numbers = [x for x in range(3, 12) if x % 3==0]
print(even_numbers)
```

a) None
b) [1, 2, 3, 4, 5]
c) [3, 6, 9]
d) [3, 6, 9, 12]
e) None of the above

Question 15: Which is the output of the following program?

```
X = [[1,  1,  2],
     [3 , 51, 99],
     [5 , 81, 23]]

result = [[0,0,0],
          [0,0,0],
          [0,0,0]]

for i in range(len(X)):
    for j in range(len(X[0])):
        result[j][i] = X[i][j]

for r in result:
    print(r)
```

a) [1, 3, 5]
[1, 51, 81]
[2, 99, 23]
b) [1, 3, 5] [1, 51, 81] [2, 99, 23]
c) [1, 10, 10]
[1, 3, 5]
[2, 99, 23]
d) [1, 0, 0]
[0, 1, 81]
[0, 0, 0]
e) None of the above

Question 16: Which is the output of the following program?

```
def my_function(my_data):
  rs = 0
  for i in my_data:
    rs += i
  return rs

my_list = [2, 3, 4, 5]
print(my_function(my_data = my_list))
```

a) 12
b) 13
c) 14
d) 15
e) None of the above

Question 17: Which is the output of the following program?

```
def my_function(my_data):
  result = []
  for element in data:
    if element not in result:
      result.append(element)
  return result

data = [ {'friends':['Tom', 'Mike', 'Taylor']}, 2002, 2099, 3000, 'moon']
print(my_function(data))
```

a) ['friends': ['Tom', 'Mike', 'Taylor'], 2002, 2099, 3000, 'moon']
b) ['Tom', 'Mike', 'Taylor', 2002, 2099, 3000, 'moon']
c) [None, 2002, 2099, 3000, 'moon']
d) Raise an error
e) None of the above

Question 18: Which is the output of the following program?

```python
def my_function(data, max, min):
    result = []
    for i in data:
        if i < min:
            result.append(min)
        elif i > max:
            result.append(max)
        else:
            result.append(i)
    return result

my_list = [1, 2, 3, 4, 5, 6, 7]
max = 5
min = 2
print(my_function(max = max, min = min, data = my_list))
```

a) [0, 0, 3, 4, 0, 0, 0]

b) [1, 1, 3, 4, 5, 7, 7]

c) [2, 2, 3, 4, 5, 5, 5]

d) $TypeError$: my_function() got multiple values for argument $'data'$

e) None of the above

Question 19: Which is the output of the following program?

```python
def my_function(x, y):
    x.extend(y)
    return x

list_num1 = [-1, -4, -9]
list_num2 = [2, 3, 5]
list_num3 = [0, 0, 0]

my_function(list_num1, my_function(list_num2, list_num3))
```

a) [-1, -4, -9, 2, 3, 5, 0, 0, 0]

b) [1, 4, 9, 2, 3, 5]

c) [2, 3, 5, 0, 0, 0]

d) $TypeError : my\_function()$ got multiple values for argument $'my\_function(list\_num2, list\_num3)'$

e) None of the above

Question 20: Which is the output of the following program?

```
def check_the_number(N):
    list_of_numbers = []
    result = ""
    for i in range(1, 10, 3):
        list_of_numbers.append(i)
    if N in list_of_numbers:
        results = "True"
    if N not in list_of_numbers:
        results = "False"
    return results

N = 0
N =+ 5
results = check_the_number(N)
print(results)
```

a) True
b) False
c) Nothing
d) $SyntaxError$: invalid syntax
e) None of the above

Question 21: Which is the output of the following program?

```
data = "['dog', 'cat', [1, 2]]"
print(type(data))
```

a) $<$class $'str'>$
b) $<$class $'list'>$
c) $<$class $'mydata'>$
d) $NameError$: name $'type'$ is not defined
e) None of the above

Question 22: Which is the output of the following program?

```
def my_function(n):
    x = n[0]
    for i in n:
        if i < x:
            x = i
    return x

my_list = [-7, 99, 100, 2, 0, -20]
my_function(my_list)
```

a) None
b) Raise an error
c) -20
d) 100
e) None of the above

Question 23: Which is the output of the following program?

```
Ann = '@ThiS tEst is Very eaSy @@'
David = "i love iT!"

txt = Ann.strip('@').capitalize()+ David.title()
print(txt)
```

a) This test is very easy I Love It!
b) this test is very easy @@I Love It!
c) This test is very easy@ I LOVE IT!
d) *SyntaxError*: invalid syntax
e) None of the above

Question 24: Which is the output of the following program?

```
1  def my_function(n):
2      x = n[0]
3      for i in n:
4          if i > x:
5              x = i
6      return x
7
8  my_list = [-200, -99, -100, -2004, 0, -20]
9  my_function(my_list)
```

a) None
b) Raise an error
c) 0
d) -200
e) None of the above

Question 25: Which is the output of the following program?

```
1  def my_function(integers, number = -999):
2      return any([True if i == number else False for i in integers ])
3
4  my_list = [1, 3, 6, 9. -100, 19, 2004, 2023]
5  my_function(my_list, 2004)
```

a) -999
b) 2004
c) True
d) False
e) None of the above

Question 26: Which is the output of the following program?

```
1  my_exam = "I do my      homework every evening!"
2  print(my_exam.strip('!').split())
```

a) ['I', 'do', 'my', 'homework', 'every', 'evening!']
b) ['I', 'do', 'my', ' homework', 'every', 'evening', '!']
c) ['I', 'do', 'my', 'homework', 'every', 'evening']
d) All A, B, C
e) None of the above

Question 27: Which is the output of the following program?

```
1  def function_helper(x, data):
2    for i in data:
3      if x == i:
4        return 0
5
6    return 1
7
8  def a_function(data):
9    res = []
10   for i in data:
11     if function_helper(i, res):
12       res.append(i)
13
14   return res
15
16 lst = [1, 1, 2, 2, 3]
17 print(a_function(lst))
```

a) [1, 2, 3]
b) [3, 2, 1]
c) [1, 1, 2, 2, 3]
d) [3, 2, 2, 1, 1]
e) None of the above

Question 28: Which is the output of the following program?

```
1  def my_function(signal1, signal2):
2    var = False
3    for s1 in signal1:
4      for s2 in signal2:
5        if s1 == s2:
6          var = True
7          return var
8  print(my_function([0, 1, 1, 0], [100, 11, 110]))
```

a) False
b) True
c) Raise an error
d) None
e) None of the above

Question 29: Which is the output of the following program?

```
1  def my_function(signal1, signal2):
2    var = False
3    for s1 in signal1:
4      for s2 in signal2:
5        if s1 == s2:
6          var = True
7          return var
8  print(my_function([0, 1, 1, 9], [9, 9, 9]))
```

a) False
b) True
c) Raise an error
d) None
e) None of the above

Question 30: Which is the output of the following program?

```
1  def my_function(data):
2    var = []
3    for i in data:
4      if i%2 == 0:
5        var.append(i)
6    return var
7
8  print(my_function([1, 2, -4, 5, 7, 23]))
```

a) [1, 5]
b) [1, 5, 7, 23]
c) A and D
d) [2, -4]
e) None of the above

Question 31: Which is the output of the following program?

```python
def square(num):
  '''
  Returns the square of the number entered.
  The number entered must be an integer
  '''
  return num ** 2

print(square.__doc__)
```

a) Returns the square of the number entered. The number entered must be an integer

b) numnum

c) Raise an error

d) See you!

e) None of the above

Question 32: Which is the output of the following program?

```python
def a_function(x):
  res = ""
  for i in x:
    res = i + res
  return res

x = 'cat'
print(a_function(x))
```

a) cat

b) tac

c) ca

d) ta

e) None of the above

Question 33: Which is the output of the following program?

```python
my_list = [1, 1, 2, 3, 5]
odd = 1
even = 0

for number in my_list:
  if number % 3 == 0:
    even += number
  else:
    odd += number
print(f"odd:{odd}, even:{even}")
```

a) odd:1, even:0
b) odd:3, even:10
c) odd:10, even:3
d) *SyntaxError*: invalid syntax
e) None of the above