

Mark all the correct options. There is only **one** correct option per question. Please, transcript your answers in the boxes on the last page.

1. Every python function returns a value.

- A. True
- B. False

2. What is the output?

```
x = [0, 1]
x[1],x[0] = x if x[0]<x[1] else (x[1],x[0])
print(x)
```

- A. (0, 1)
- B. [1, 0]
- C. [0, 1]
- D. (1, 0)

3. Which of the following is the best choice for a python identifier?

- A. longest_string
- B. maximum value
- C. 1_string
- D. dict

4. What will be the final content of the *text.txt* file?

```
fruits = ['apples', 'oranges', 'lemons']
with open('text.txt', 'w') as f:
    f.write('I love: ')
    f.writelines(fruits[:-1])
f.write(' and bananas!')
```

- A. I love: applesorangeslemons
- B. I love: applesorangeslemons and bananas!
- C. I love: applesoranges
- D. I love: applesoranges and bananas!

5. Which of the following will sort a list of strings **a** considering the last character, the first, and finally the total string length?

- A. a.sort(key=lambda x:(x[1], x[0], len(x)))
- B. a.sorted(key=lambda x:(x[-1], x[0], len(x)))
- C. a.sort(key=lambda x:(x[len(x)], x[0], len(x)))
- D. a.sort(key=lambda x:(x[len(x)-1], x[0], len(x)))

6. Given the following recursive implementation of the sum of a list, what would be the recursion step in the last line of the code (replacing the sequence of *)?

```
def recur_sum(a_list):
    if len(a_list) == 0:
        return 0
    else:
        *****
```

- A. return a_list[0] + recur_sum(a_list[-1])
- B. return a_list[0] + recur_sum(a_list[0:])
- C. return a_list[0] + recur_sum(a_list[1:])
- D. return a_list[0] + recur_sum(a_list[:])

7. Given the list L = [8, -3, 1, 10, 5, -4, 12, 2, 0], suppose you choose number 1 as the pivot, what would be its position in the list after executing the partitioning step of the Quicksort algorithm?

- A. 0
- B. 2
- C. 3
- D. 1

8. Which of the following built-in python types does not support the “+” operator?

- A. Set

- B. Tuple
- C. String
- D. Boolean

9. How many elements has a list defined as [x for x in range(1,10) if x%2]?

- A. 9
- B. 5
- C. 6
- D. 10

10. What needs to be considered when estimating how efficient is a program?

- A. The number of loops
- B. The number of loops and if statements
- C. The number of lines in the text of the program's source code
- D. How the input affects the number of instructions executed

11. Which of the following can **not** be used to check if the variable **an_elem** is a key of a dictionary **a_dict**?

- A. an_elem in a_dict.keys()
- B. an_elem in a_dict.items()
- C. an_elem in a_dict
- D. an_elem_dict.get(a) != None

12. What is the value of **a** after the statement **a = int (-5.89)**?

- A. 6
- B. -5
- C. -6
- D. 0

13. Which of the following can **not** be a key of a dictionary?

- A. 123
- B. '123'
- C. [1,2,3]
- D. (1,2,3)

14. A dictionary can have elements with the same keys but with different values.

- A. In any case
- B. In no case
- C. Only if the values are lists
- D. Only if the values are objects

15. What is the value of **B**?

A=[1, 2, 3]

B=map(sum,zip(map(lambda x: x+x,A[::-1]),A))

- A. [6, 4, 2]
- B. [7, 6, 5]
- C. [2, 1, 0]
- D. [2, 3, 4]

16. Which of the following expressions will return the string **a_string** reversed?

- A. a_string[len(a_string):-1:-1]
- B. a_string[::-1:-1]
- C. a_string[::-1]
- D. a_string[-1:-1:-1]

17. Considering the following piece of code, what will be the final value of the **b** variable?

```
def do_sum(a_list:list):
    sum = 0
    for i in range(1, len(a_list), 2):
        sum += a_list[i]
    return sum
```

b = do_sum(range(0,10))

- A. 20
- B. 30
- C. 25
- D. 24

18. Which of the following can **not** be the first input parameter for a map function call?

- A. A lambda function
- B. The print function
- C. Any iterable
- D. The zip function

19. Which of the following expressions is **not** iterable?

- A. ['a', 1, 2.0][2]
- B. 'a12.0'[2:]
- C. ('a', 1, 2.0)[:]
- D. {'a', 1, 2.0}[:2]

20. Which of the following is not a possible file type you can open in python?

- A. A directory
- B. A binary file
- C. A text file
- D. A Microsoft Word document

Please, transcript your answers in the boxes below:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20