

1. True or False: The length of a list is given by the length() function.
2. True or False: The index for the first element of a list is 1, e.g., xlist[1] is the first element of the list xlist.
3. What is the output produced by the following code?

```
xlist = []  
xlist.append(5)  
xlist.append(10)  
print(xlist)
```

- (a) [5, 10]
- (b) []
- (c) 5, 10
- (d) 5 10
- (e) This produces an error.
- (f) None of the above.

4. What is the output produced by the following code?

```
zlist = []  
zlist.append([3, 4])  
print(zlist)
```

- (a) [3, 4]
- (b) [[3, 4]]
- (c) 3, 4
- (d) 3 4
- (e) None of the above.

5. What is the value of xlist2 after the following statement has been executed?

```
xlist2 = list(range(-3, 3))
```

- (a) [-3, -2, -1, 0, 1, 2, 3]
- (b) [-3, -2, -1, 0, 1, 2]
- (c) [-2, -1, 0, 1, 2]
- (d) [-3, 0, 3]
- (e) This produces an error.

6. What is the value of xlist3 after the following statement has been executed?

```
xlist3 = list(range(-3, 3, 3))
```

- (a) [-3, 0, 3]
- (b) [-3, 0]
- (c) [-2, 1]
- (d) This produces an error.

7. What is the value of xlist4 after the following statement has been executed?

```
xlist4 = list(range(-3))
```

- (a) []
- (b) [-3, -2, -1]
- (c) [-3, -2, -1, 0]
- (d) This produces an error.

8. What is output produced by the following?

```
xlist = [2, 1, 3]
ylist = xlist.sort()
print(xlist, ylist)
```

- (a) [2, 1, 3] [1, 2, 3]
- (b) [3, 2, 1] [3, 2, 1]
- (c) [1, 2, 3] [2, 1, 3]
- ☒ (d) [1, 2, 3] None
- (e) This produces an error.

9. To what value is the variable x set by the following code?

```
def multiply_list(start, stop):
    product = 1
    for element in range(start, stop):
        product = product * element
    return product
x = multiply_list(1, 4)
```

- (a) 24
- ☒ (b) 6
- (c) 2
- (d) 1

10. Consider the following function:

```
def f1(x, y):
    print([x, y])
```

☒ True or ☐ False: This function returns a list consisting of the two parameters passed to the function.

11. Consider the following function:

```
def f2(x, y):
    return x, y
```

☒ True or ☐ False: This function returns a list consisting of the two parameters passed to the function.

12. Consider the following function:

```
def f3(x, y):
    print(x, y)
    return [x, y]
```

☒ True or ☐ False: This function returns a list consisting of the two parameters passed to the function.

13. Consider the following function:

```
def f4(x, y):
    return [x, y]
    print(x, y)
```

☒ True or ☐ False: This function prints a list consisting of the two parameters passed to the function.

14. Consider the following function:

```
def f5(x, y):  
    return [x, y]  
    print([x, y])
```

True or False: This function prints a list consisting of the two parameters passed to the function.

15. What output is produced by the following code?

```
xlist = [3, 2, 1, 0]  
for item in xlist:  
    print(item, end=" ")
```

- (a) 3210
- ☒ (b) 3 2 1 0
- (c) [3, 2, 1, 0]
- (d) This produces an error.
- (e) None of the above.

16. What output is produced by the following code?

```
a = 1  
b = 2  
xlist = [a, b, a + b]  
a = 0  
b = 0  
print(xlist)
```

- (a) [a, b, a b]+
- ☒ (b) [1, 2, 3]
- (c) [0, 0, 0]
- (d) This produces an error.
- (e) None of the above.

17. What output is produced by the following code?

```
xlist = [3, 5, 7]  
print(xlist[1] + xlist[3])
```

- (a) 10
- (b) 12
- (c) 4
- ☒ (d) This produces an error.
- (e) None of the above.

18. What output is produced by the following code?

```
xlist = ["aa", "bb", "cc"]  
for i in [2, 1, 0]:  
    print(xlist[i], end=" ")
```

- (a) aa bb cc
- ☒ (b) cc bb aa
- (c) This produces an error.
- (d) None of the above.

19. What does the following code do?

```
for i in range(1, 10, 2):  
    print(i)
```

- ☒ (a) Prints all odd numbers in the range [1, 9].
- (b) Prints all numbers in the range [1, 9].
- (c) Prints all even numbers in the range [1, 10].
- (d) This produces an error.

20. What is the result of evaluating the expression `list(range(5))`?

- ☒ (a) [0, 1, 2, 3, 4]
- (b) [1, 2, 3, 4, 5]
- (c) [0, 1, 2, 3, 4, 5]
- (d) None of the above.

21. Which of the following headers is appropriate for implementing a counted loop that executes 4 times?

- (a) for i in 4:
- (b) for i in range(5):
- ☒ (c) for i in range(4):
- (d) for i in range(1, 4):

22. Consider the following program: \*

```
def main():  
    num = eval(input("Enter a number: "))  
    for i in range(3):  
        num = num * 2  
    print(num)  
main()
```

range 3 → [0, 1, 2]

Suppose the input to this program is 2, what is the output?

- (a) 2
- 4
- 8
- (b) 4
- 8
- (c) 4
- 8
- 16
- ☒ (d) 16

23. The following fragment of code is in a program. What output does it produce?

```
fact = 1  
for factor in range(4):  
    fact = fact * factor  
print(fact)
```

- (a) 120
- (b) 24
- (c) 6
- ☒ (d) 0

24. What is the output from the following program if the user enters 5.

```
def main():  
    n = eval(input("Enter an integer: "))  
    ans = 0  
    for x in range(1, n):  
        ans = ans + x  
    print(ans)  
main()
```


- (a) 120
- ☒ (b) 10
- (c) 15
- (d) None of the above.

25. What is the output from the following code?

```
s = ['s', 'c', 'o', 'r', 'e']  
for i in range(len(s) - 1, -1, -1):  
    print(s[i], end = " ")
```

- (a) s c o r e
- (b) e r o c s
- (c) 4 3 2 1 0
- (d) None of the above.

26. The following fragment of code is in a program. What output does it produce?

```
s = ['s', 'c', 'o', 'r', 'e']  
sum = 0  
for i in range(len(s)):   
    sum = sum + s[i]  
print(sum)
```

- (a) score
- (b) erocs
- (c) scor
- (d) 01234
- ☒ (e) None of the above.

27. The following fragment of code is in a program. What output does it produce?

```
s = ['s', 'c', 'o', 'r', 'e']  
sum = ""  
for i in range(len(s)):   
    sum = s[i] + sum  
print(sum)
```

- ☒ (a) score
- (b) erocs
- (c) scor
- (d) 01234
- (e) None of the above.

28. What is the value returned by the following function when it is called with an argument of 3 (i.e., summer1(3))?

$n = 3$

```
def summer1(n):  
    sum = 0  
    for i in range(1, n + 1):  
        sum = sum + i  
    return sum
```

$n = 4$

- (a) 3
- (b) 1
- ☒ (c) 6
- (d) 0

29. What is the value returned by the following function when it is called with an argument of 4 (i.e., summer2(4))?

```
def summer2(n):  
    sum = 0  
    for i in range(n):  
        sum = sum + i  
    return sum
```

$n = 4$

- (a) 3
- (b) 1
- ☒ (c) 6
- (d) 0

30. Consider the following function:

```
def foo():  
    xlist = []  
    for i in range(4):  
        x = input("Enter a number: ")  
        xlist.append(x)  
    return xlist
```

Which of the following best describes what this function does?

- (a) It returns a list of four numbers that the user provides.
- ☒ (b) It returns a list of four strings that the user provides.
- (c) It returns a list of three numbers that the user provides.
- (d) It produces an error.