

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. **Prints not returns**

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. **Returns a tuple not a list**

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()
```

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))?

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

- (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
```

- (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.

1. What output is produced by the following code?

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

[1, 2]

2. What output is produced by the following code?

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

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3. What output is produced by the following code?

```
xlist = [1, [1, 2], [1, 2, 3]]  
print(xlist[1] + [1])
```

[1, 2, 1]

4. What output is produced by the following code?

```
def sum_part(xlist, n):  
    sum = 0  
    for x  
    in xlist[n]:  
        sum = sum + x  
    return sum
```

```
ylist = [[1, 2], [3, 4], [5, 6], [7, 8]]  
x = sum_part(ylist, 2)  
print(x)
```

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5. Assume xlist is a list of lists where the inner lists have two elements. The second element of these inner lists is a numeric value. Which of the following will sum the values of the second element of the nested lists and store the result in sum?

- (a)

```
sum = 0  
for item in xlist:  
    sum = sum + item[1]
```
- (b)

```
sum = 0  
for one, two in xlist:  
    sum = sum + two
```
- (c)

```
sum = 0  
for i in range(len(xlist)):  
    sum = sum +  
    xlist[i][1]
```

(d) (d) All of the above.

6. What output is produced by the following code?

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

- (a) 123246369
- (b) 0000012302460369
- (c) 000012024
- (d) None of the above.

7. What output is produced by the following code? s = "abc" for i in range(1, len(s) + 1): sub = "" for j in range(i): sub = s[j] + sub print(sub)

(a) a

ba

cba

(b) a

ab

abc

(c) a

ab

(d) This code produces an error.

8. What output is produced by the following code? s = "grasshopper" for i in range(1, len(s), 2):

```
    print(s[i], end="")
```

- (a) gasopr
- (b) gr
- (c) rshpe
- (d) rshper

9. What output is produced by the following code?

```
x = [7] y = x
x[0] = x[0] +
3 y[0] = y[0]
- 5
print(x, y)
```

[5] [5]

10. What output is produced by the following code?

```
x = [7] y
= x x =
[8]
print(x,
y)
```

[8] [7]

11. What output is produced by the following code?

```
x = [1, 2, 3,
4] y = x y[2]
= 0 z = x[1 :
] x[1] = 9
print(x, y, z)
```

[1, 9, 0, 4]

[1, 9, 0, 4]

[2, 0, 4]

12. What output is produced by the following code? s = "row" for i in range(len(s)):

```
print(s[:i])
```

(a) r

ro

(b) r

ro

row

(c) ro

ro

w

(d) No

ne

of

the

ab

ov
e.

13. What output is produced by the following code?

```
s = "stab" for i in  
range(len(s)):  
    print(s[i : 0 : -1])
```

(a) s ts
ats
bats

(b) t at
bat

(c) s st
sta

(d) None
of
the
abov
e.

14. What output is produced by the following code?

```
s = "stab" for i in  
range(len(s)):  
    print(s[i : -5 : -1])
```

(a) s
ts
ats
bat
s

(b) t
a
t
b
a
t

(c) s
s
t
s
t
a

(d) N
o

n
e
o
f
t
h
e
a
b
o
v
e
.

15. What output is produced by the following code?

```
s = "stab"
for i in range(len(s)):
    print(s[0 : i : 1])
```

(a)

s
ts
ats
ba

ts

(b)

t
at
ba
t

(c) s
s
t
s
t
a

(d) N

o
n
e
o
f
t
h
e
a
b
o
v

e

.