

CptS 111 — Quiz #4

NAME: ANSWER KEY

- This quiz is open book, open notes, and “open computer.” If you are not sure of an answer, please test things on your laptop! (Even if you are sure, if you have the time, it doesn’t hurt to double-check your answer using your computer.)
- **This must be done individually!** It is **not** open neighbor.
- You have 20 minutes to complete this quiz. (There are 14 questions.)
- All problems are of equal weight.
- **CAREFUL!** There are a few tricky questions. Be sure you see what is there, not what you think should be there. Again, if you have the time, double-check your answers by entering the code into Python.

1. What does the following code do?

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

- (a) Prints all numbers in the range [1, 9].
 - (b) Prints all odd numbers in the range [1, 9]. ← **ANSWER**
 - (c) Prints all even numbers in the range [1, 10].
 - (d) This produces an error.
2. What is the result of evaluating the expression `list(range(5))`?
- (a) [0, 1, 2, 3, 4] ← **ANSWER**
 - (b) [1, 2, 3, 4, 5]
 - (c) [0, 1, 2, 3, 4, 5]
 - (d) None of the above.
3. 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(1, 4):`
- (d) `for i in range(4):` ← **ANSWER**

4. 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 ← **ANSWER**

5. 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)
```

(Be sure you think about this!)

- (a) 120
- (b) 24
- (c) 6
- (d) 0 ← **ANSWER**

6. To what values does the following statement set the variables x and y ?

```
x, y = divmod(13, 7)
```

- (a) 6 and 1
- (b) 1 and 6 ← **ANSWER**
- (c) 6.0 and 2.0
- (d) This produces an error.

7. 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 ← **ANSWER**
- (c) 15
- (d) None of the above.

8. 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 ← **ANSWER**
- (c) 4 3 2 1 0
- (d) None of the above.

9. 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. ← **ANSWER** Cannot add a string and integer (sum is initialized to an integer).

10. 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 \leftarrow **ANSWER** Letters are added to the front.
- (c) scor
- (d) 01234
- (e) None of the above.

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

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

- (a) 3
- (b) 1 \leftarrow **ANSWER** return statement is in the for-loop.
- (c) 6
- (d) 0

12. 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 \leftarrow **ANSWER**
- (d) 0

13. The following code is executed:

```
def get_input():
    x = float(input("Enter a number: "))
    return x

def main():
    get_input()
    print(x ** 2)

main()
```

At the prompt the user enters 2. What is the output of this program?

- (a) `x ** 2`
- (b) 4
- (c) 4.0
- (d) This produces an error. \Leftarrow **ANSWER** `x` is undefined in `main()`.
- (e) None of the above.

14. 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. \Leftarrow **ANSWER**
- (c) It returns a list of three numbers that the user provides.
- (d) It produces an error.