CS303E Week 6 Worksheet: Functions

Name: _____   EID: _____

Read the questions carefully, and answer each question in the space provided. Use scratch paper to do your work and then copy your answers neatly and legibly onto the test paper. Only answers recorded on the test paper will be graded.

1. (10 points: 1 point each) The following are true/false questions. **Write either T or F in the boxes at the bottom of page 1.** If there's any counterexample, it's false.

   (a) A function must always have a return statement.

   (b) A variable defined within a function is limited to that function and is not accessible outside of it.

   (c) You can call a function without passing any arguments, even if it has parameters with no default value.

   (d) When a function lacks a return statement or includes a return statement without specifying a value, it implicitly returns 0.

   (e) A function can have multiple parameters with the same name as long as they have different default values.

   (f) Keyword arguments are passed to a function based on their order in the function's parameters, while positional arguments are explicitly specified by name in the function call.

   (g) When you pass a mutable object as an argument to a function in Python, the function can modify the object.

   (h) A break statement and a return statement can be used interchangeably.

   (i) Functions can have multiple return statements, but only one of them will be executed during the function's execution.

   (j) Functions can return multiple values using the return statement followed by a comma-separated sequence of values.

a	b	c	d	e	f	g	h	i	j

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Questions 2-6 are multiple choice. Each counts 2 points. **Write the letter of the BEST answer in the box on the next page. Please write your answer in UPPERCASE. Each problem has a single answer.**

2. What is the primary difference between using `return` and `print()`?

   A. Both `return` and `print()` serve the same purpose, so you can use either one interchangeably.

   B. `return` is used to exit a function and signal a value, while `print()` is used to display output on the console.

   C. `print()` is used to return values to the caller, while `return` is used to display output on the console.

   D. `return` and `print()` are used for the same purpose, but `return` is used when working with numerical values, and `print()` is used for strings.

3. Which of the following is not an advantage of using a function?

   A. Reusability of code.

   B. Easier debugging and maintenance.

   C. Increased program execution speed.

   D. Improved code organization and readability.

4. What is a requirement for a function?

   A. A function must have at least one parameter.

   B. A function must contain at least one return statement.

   C. A function must be defined using the `def` keyword.

   D. A function must have default values for its parameters.

5. What is the significance of proper indentation in relation to functions?

   A. Indentation within a function is optional and doesn't affect the function's behavior.

   B. Indentation is used to group code together and define the body of the function.

   C. Indentation is used to define the end of a function.

   D. Indentation is necessary to declare function parameters.

6. In which of the following scenarios would you not want to use default arguments for a function?

   A. When you want to simplify function calls by allowing some arguments to be omitted.

   B. When you want to minimize potential confusion and ensure that function behavior is explicit.

   C. When you need the function to handle different cases with varying argument values.

   D. When you want to ensure that all function arguments are explicitly provided by the caller.

2	3	4	5	6

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The following 7 questions require you to trace the behavior of some Python code and identify the output of that code. For each question, write the output for the code segment on the provided line.

7. (3 points)

```python
def lulu(buttercup, coco, jasper):
    return jasper + buttercup / coco

peanut = lulu(coco = 3, jasper = 2, buttercup = 6)
print(peanut)
```


8. (3 points)

```python
def coraline(wybie = 7):
    wybie *= 2
    return wybie * 2

mister = round(6.5)
taterTot = coraline(mister)
pumpkin = coraline(coraline())
print(taterTot, pumpkin)
```


9. (3 points)

```python
def kookie(grey):
    kitkat = True
    basil = False
    while not basil and kitkat:
        break
        return grey + 5

print(kookie(10))
```


10. (3 points)

```python
def josh(chica, apollo, coco, peaches):
    return chica + apollo * coco * peaches

print(josh(chica = 5, peaches = 2, apollo = 2, 3))
```

11. (3 points)

```python
def elmo():
    cookieMonster = "chunky"
    BIGbird = "squawky"
    return BIGbird
    return cookieMonster

myFavoriteStreet = elmo() # GO TEAM SESAME!!!
print(myFavoriteStreet)
```

12. (3 points)

```python
def marriage():
    return "Bert", "Ernie"

spouse1, spouse2 = marriage()
print(spouse1, "<3", spouse2)
```

13. (3 points)

```python
def countDracula():
    count = 0
    for num in range(10):
        count += 1

print(count)
```