CS303E Week 8 Worksheet: More on Strings

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) Characters are a different class from strings in Python.

   (b) If `s1 == s2` for strings `s1` and `s2`, `s1 in s2` will return False.

   (c) In Python, you can directly modify a character within a string by using the index notation, like `s[2] = "z"`.

   (d) Strings in Python are 0-based indexed (i.e., the first character is at index 0).

   (e) The `strip()` method in Python removes both leading and trailing whitespace from a string.

   (f) Python allows you to compare strings using the relational operators `(<, <=, >, >=)`.

   (g) Strings can indexed using negative numbers.

   (h) On string `s`, `min(s) == max(s)` will always evaluate to False.

   (i) `islower()`, `isdigit()` and `isalpha()` are all functions and not methods, so they take a string as a parameter rather than being directly called on a string object.

   (j) When `s` is a string, in loops like `"for c in s"`, `c` will refer to a character of `s` in each iteration.

a	b	c	d	e	f	g	h	i	j

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Questions 2-10 are multiple choice. Each counts 2 points. **Write the letter of the BEST answer in the box on page 3. Please write your answer in UPPER-CASE. Each problem has a single answer.**

2. What is the result of `"oink oink" * 2 + " oink"`?

   A. `oink oinkoink oink oink`
   B. `oink oinkoink`
   C. `oink oink oink oink`
   D. it's an error
   E. none of the above

3. What is the result of `"Teehee".find("e")`?

   A. 1 B. 2 C. 4 D. 5 E. -1

4. Which operator can be used to check if a substring is present in a string?

   A. `contains` B. `in` C. `exists` D. `substring` E. both A and B

5. Given the following code, what is the final value of `n`?

```
s = "Basil and Wybie"
n = len(s) - len(s.replace(" ", ""))
```

   A. 0 B. 15 C. 2 D. 3 E. None of the above

6. Which operators cannot be used with strings in Python?

   A. `*` B. `-` C. `+` D. all of the above can be used

7. What does the `replace()` method do when applied to a string?

   A. It removes all whitespace from the string.
   B. It replaces all occurrences of one substring with another.
   C. It reverses the characters in the string.
   D. It raises an error since strings are immutable.

8. If you want to traverse through a string `S` using negative indices in Python, which loop could you use?

   A. `for char in S`
   B. `for i in range(len(S))`
   C. `for i in range(-len(S), 0, -1)`
   D. `for i in range(-len(S), 0)`
   E. `for i in range(-1, -len(S)-1, -1)`
   F. C, D, and E
   G. C and E

9. If `s` is a string, which expression will always evaluate to `True`?

   A. `chr(ord(s))) == s`
   B. `s.upper().lower() == s`
   C. `s[0:len(s)] == s`
   D. all of the above

10. What will be the output of the following Python code?

```
print("abc. DEF".capitalize())
```

   A. `Abc.  def`
   B. `abc.  def`
   C. `Abc.  Def`
   D. `ABC. DEF`

2	3	4	5	6	7	8	9	10

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The following questions (2 points each) ask 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 in the box provided. Don't worry about line breaks. If there's an error, say so, but you don't need to specify the type of error.

11.
```
s = "Shop here"
new = ""
for char in s:
   new += chr(ord(char) - 3)
print(new)
```

12.
```
s = "SillyGoose#12"
result = ""

for char in s:
    if char in str(not s):
        result += "B"
    elif char.isalpha():
        result += char.upper()
    elif char.isdigit():
        result += str(int(char) + 5)
    else:
        result += char

print(result)
```

13.
```
s = "oompaLoompa"
result = (s[-len(s):-len(s)+5] + " " + s[-6:])

print(result)
```

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14.
```
spongebob = "goofyG00ber"
patrick = "krus7ykr4b"
gary = "+25"

sandy = patrick.islower() and patrick[999:9999] == ""
squidward = gary.isalnum() and gary.isdigit()
mrKrabs = spongebob[6:8].isdigit() and spongebob.count("o") == 2

print(sandy, squidward, mrKrabs)
```

15.
```
def catInTheHat(thing1, thing2):
    thing1 = thing1 + thing2
    thing2 = thing1
    print(thing1 is thing2)

string1 = "greenEggs"
string2 = "Ham"
catInTheHat(string1, string2)
print(string1, string2)
```

16.
```
myGuineaPig = "Jerry"
print(myGuineaPig[0:1000] * 2)
```

17.
```
alpha, beta = "castiel", "dean"
omega = beta[:2] + alpha[2:]
sigma = beta[:len(beta)] + alpha[:3]
print(min(omega, sigma), max(omega, sigma))
```

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