CIS 830 Midterm Exam **Name Joash Gem Marcos**

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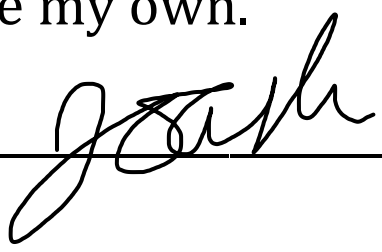
Please submit your work to Canvas by 11:59 PM 2/9/2023. Be sure to submit your work as single pdf file along with signed signature page
NO LATE ASSIGNMENT WILL BE ACCEPTED.

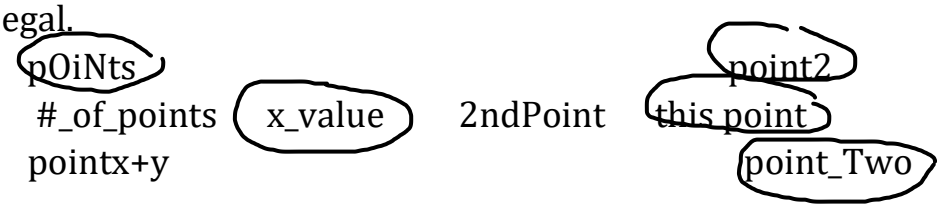
"I affirm that I will not give or receive any unauthorized help on this exam, and that all work will be my own."

Signature 

Q1. (4 pts) Explain the difference between a *variable* and an *expression*.
Variables are a data type that stores a value in memory while an expression is the combination of multiple variables and symbols in one data type

Q2. (4 pts) What does *immutable* mean in Python? Include an example.
Immutable means that it cannot be changed since its declaration, one common is the data type tuple cannot be modified after being defined

Q3. (4 pts) Circle the legal identifiers. Briefly indicate why the illegal ones are illegal.



Identifiers starting with a digit or containing a special symbol are illegal.

Q4. (4 pts) Write a statement that prints the line She yelled, "Run for the Hills!"
print ("She yelled, \"Run for the Hills!\"")

Q5. (2 pts) Compute the values using Python operation
(a) 2 ** 5 = 32 (b) 26 // 7 = 3
(c) 34 % 5 = 4 (d) 19 / 5 = 3.8

Q6. (5 pts) Explain why Python can hold integers exactly but not floats.
Python holds integers only as whole numbers, therefore any decimals in the value will be cut off unlike floats.

Q7. (4 pts) If s = "Albatross!", what is printed (or error)?
print("1:", s[5]) print("2:", s[-3]) print("3:", s[4:8])
print("4:", s[:7]) print("5:",s[1:])
print("6:", len(s))

1: r
2: o
3: tros
4: Albatro
5: lbatross
6: 9

Q8. (2 pts) Circle all legal Python string operation.

(a) "123" + "abc" (b) "ABC"*3
(c) "123" - 3 (d) "ABC".lower()

Q9. (4 pts) True or False: In Python 4 + 5 and 4.0 + 5.0 produce the same result.
Explain your answer.

False, when 4 + 5 is assigned into a variable, it can still be the integer variable type, while 4.0 + 5.0 has to be stored in at least a float variable, not int.

Q10. (2 pts) Circle all the correct statement(s).

(a) Slicing can only be applied to strings, not lists
(b) A string can be used in creating another string.
(c) Once created, lists cannot be modified.
(d) Strings are a sequence of only characters; lists are a sequence of any types or combination of types.

Q11. (5 pts) Write Python code for following statements.

a) Ask user to enter first number and assign it to num1

```
user1 = input("Enter first number: ")
num1 = user
```

b) Ask user to enter second number and assign it to num2

```
user2 = input("Enter second number: ")
num2 = user2
```

c) Add these two values and assign it to sum

```
sum = num1 + num2
```

d) print the output as The sum of num1 and num2 is sum using format method. "" .format()

```
print ("The sum of {0} and {1} is sum using format
method.".format(num1,num2))
```

Q12. (4 pts) If I do t = "Bread", followed by t[4]="k" what happens? Briefly explain.

Since "Bread" is a string, it is a data structure called a character array, accessing and changing the value of an element of that array will change the overall string, "Bread" after the t[4]="k" turns into "Break".

Q13. (2 pts) Circle all operations that will produce the last element of a string mystring?

(a) mystring[len(str) - 1]
(b) mystring.(len(str-1))]
(c) mystring[len(str)]
(d) mystring[-1]

Q14. (4 pts) Consider following code. What list output would you expect after print command? fruits1 = ['apple', 'orange', 'mango', 'banana', 'watermelon'] fruits1[0] = 'strawberry' print(fruits1) fruits1.insert(0, 'peach') print(fruits1)

['peach', 'strawberry', 'orange', 'mango', 'banana', 'watermelon']