CS303E Exam 1: Spring, 2025 § Version A
Dr. Bill Young § Friday, September 26, 2025

Number

Name: _____ EID: _____

Read the questions carefully, and answer each question in the space provided. If you like, you can use scratch paper to do your work, but copy your answers neatly and legibly onto the test paper. Only answers recorded on the test paper will be graded. Don't write in the spaces marked "Page Total" or "Grades" at the bottom of this page.

(**Tracing Code:** 2 points each) Questions 1–5 require you to show the output of some code. For each question, write what's printed by the code segment in the provided box. If there are spaces in the output, indicate them with underscores, one per space (e.g., `1___2_3`). If nothing is printed or executing the code gives an error, say so.

1.
```
x = 3
y = 6
print(x, y, sep="/", end=":")
```

2.
```
x = 9
if x%3:
   print("abc")
elif x > 3:
   print("def")
```

3.
```
x = 123.4567
y = "abc"
print( y, format( x, "7.2f" ) )
```

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1-6	2-4	4-24	5-8	6-8	Tot-50

4.
```
a=5
b=(a==2)
print(b)
```

5.
```
a = 7
b = a // 2
c = b * 3
d = -1 - c
print(b, d)
```

(**Multiple Choice:** 2 points each) For questions 6–17 **write the letter of the BEST answer in the box on page 4. Only answers copied there will be graded.** Please write your answer in UPPERCASE. Each problem has a single answer. But be sure to read all choices before you answer.

6. Which of the following is NOT a legal variable name?

   A. `_myVar` B. `my-var` C. `MyVar` D. `A_B` E. all are legal

7. What is the output of the following: `int( 3.5 )`?

   A. 3 B. 4 C. an error

8. Which of the following, if any, is *not true* of `if` statements?

   A. the else branch is optional
   B. there can be more than one `elif` branch
   C. an integer is allowed as the condition
   D. all of these are true

9. The expression `format(3.1416, ".2f")` returns a:

   A. string B. float C. int D. bool E. error

Only answers copied to page 4 will be graded.

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10. If we execute the code `value = input()` and the user enters 25, can we then perform the operation `value2 = value + 5` without an error?

    A. Yes, it will work without any issues.
    B. No, it will result in a syntax error.
    C. Yes and `value2` will be "255".
    D. No, it will result in a runtime error.

11. Given the following code snippet, what will be the type of the value in variable z?

```
x = 5
y = 3
z = x / y
```

    A. int B. bool C. str D. float E. it's an error

12. Which of the following, if any, is true of these two in Python:

    (i) `x = y`
    (ii) `x == y`

    A. they do the same thing
    B. (i) assigns the current value of x to y; (ii) compares x and y.
    C. (i) compares x and y; (ii) assigns the current value of y to x.
    D. both are illegal if x is not defined
    E. none of the above

13. Which of the following can result in any of 1, 2, or 3? (Assume `random` has been imported.)

    A. random.randrange(1, 3)
    B. random.randint(1, 3)
    C. random.random(1, 3)
    D. either A or B

14. What is the relationship between the values `"25"` and `25`?

    A. They are equal since both represent the number 25.
    B. They are of different types: `"25"` is a string, and `25` is an integer.
    C. They have different types, but they are interchangeable because Python treats them as equivalent values.
    D. They're both funnier than `24`.

Only answers copied to page 4 will be graded.

15. What's bad about the following assignment: `print = 16`

    A. it's illegal since `print` is a reserved word;
    B. variable names should be descriptive;
    C. it redefines `print` so its no longer available for printing;
    D. `print` is a string variable and 16 is an int;
    E. there's nothing wrong with it.

16. If `x` is a float, what does `round(x)` do?

    A. rounds up to the next highest integer.
    B. rounds to the nearest integer value, always rounding up if the decimal part is greater than or equal to 0.5.
    C. rounds to the nearest integer value, always rounding down if the decimal part is less than or equal to 0.5.
    D. rounds to the nearest integer value, but if the decimal part is exactly 0.5, it rounds to the nearest even integer.

17. Consider the following code:

```
a = 3
b = a
a = 4
```

    What is the value of `a + b`?

    A. 6 B. 7 C. 8 D. 12 E. an error

Did you copy the answers to problems 6–17 into the boxes below? If not, they won't be graded.

6	7	8	9	10	11
12	13	14	15	16	17

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18. (**Programming**: 8 points) Your task in this problem is to write code you might put into file `computeTip.py` that will help you compute the tip in a restaurant. Accept two user inputs: the meal cost (a float) and a level of satisfaction (an integer between 1 and 3). Level 1 is high satisfaction and merits a tip of 20%; level 2 merits a tip of 15%, and level 3 merits 10%. Print out the final payment amount (meal cost plus tip) in dollars and cents (2 digits after the decimal point). You don't have to validate inputs. Below are two samples:

```
> python computeTip.py
Meal cost: 40.00
Satisfaction: 3
Please pay: 44.00
```

```
> python computeTip.py
Meal cost: 100.10
Satisfaction: 1
Please pay: 120.12
```

```
# Write your code below:
```

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19. (**Programming**: 8 points) Write code you could put into file `Largest.py` that will asks the user to supply three floats and reports which is the largest. It's OK if two or more are equal. Do not use `max`, `min` or `sort`. You can assume that the values input are all floats. Here is some sample behavior:

```
> python Largest.py
Number1: 17.32
Number2: 12
Number3: 97.3
The largest is 97.3
```

```
> python Largest.py
Number1: 10
Number2: 1
Number3: 10
The largest is 10.0
```

```
# Write your code here
```

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