

Study Guide for Midterm Exam

Name: _____

Student ID: _____

Signature: _____

- Be sure to write your name, studentID, and sign at the top of this page
- This exam is a close book, close notes, and no electronic devices can be used.
- Write your answer legibly and make it clear.
- All computational commands and statements appearing in this exam are specifically referring to the Python programming language taught in class.
- Absolutely no interaction between students is allowed.
- Duration for this section: 60 minutes (9:10 am – 10: 10 am).

1. A(n) _____ is a well-ordered collection of unambiguous and effectively computable operations that when executed produces a result and halts in a finite amount of time.
2. Computers have _____ hard drive space than RAM capacity. Why?
 - a. more; hard drives are faster than RAM
 - b. less; hard drive space is more volatile than RAM space
 - c. more; hard drive space is cheaper than RAM
 - d. more; hard drive space is where programs are kept while being executed
3. If you had 5 files, each one being 256 Gigabytes in size, will they fit on a 1 Terabyte drive? These units are given in the "computer science" sense of how large a Gigabyte is.
Circle one
YES If yes, how much space is left over?
NO If no, how much more space is needed?
4. If an error is detectable in your program by an interpreter before it is even executed, it is probably a:
 - a. syntax error
 - b. semantics error
 - c. run-time error
 - d. regression error
5. How would you get rid of the error in this expression?: **"abc" + 123**
 - a. change the "abc" to "456"
 - b. change the 123 to "123"
 - c. write it as `int("abc") + 123`
 - d. indent it four more spaces
 - e. there is no error in this expression

State what type the corrected expression would be: _____

6. According to regression testing, what should you do when you are running your test plan and you encounter and fix a bug in your program?

7. I have a recipe I want to make in my kitchen. It is in Russian. I don't speak Russian, just English. I have a friend who speaks both languages. If I ask my friend to stay in the kitchen with me and tell me each step of the recipe, which I will immediately do, I am asking them to act as

an interpreter / a compiler

Which one of the above is used to implement Python (usually)? _____

8. If **first** is a variable with the value 4 and **second** is a variable with the value 1,

what is the value of **first** after this statement runs? **first *= second + 4** _____

9. The expression $2 + 2 / 2 * 3$ has what value? _____

Is it an integer value or a float value? _____

10. The expression $425 \% 10$ has what value _____ of what type _____

11. There are three kinds of errors which can occur in program: _____ errors,
_____ errors, and _____ errors.

12. To find a _____ error, you have to run the program and compare the output to the expected output.

13. Complete the truth table for the **or** operator. Write Boolean constants with words, not T or F.

P	Q	P or Q

14. Which of these are valid identifiers in Python? Circle the valid ones.

PointA **1smith** **radius_3** **vel12city** **first!One**

Explain what is wrong with the invalid identifiers. _____

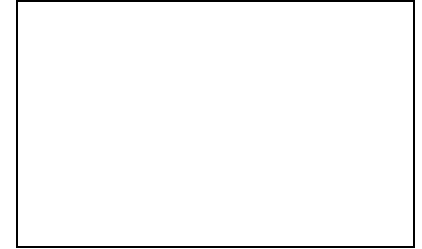
15. What data type does the input function return? _____

16. What is the output of this statement? _____

```
x = 92
```

```
if x > 25:
    print("red" , end=" ")
elif x < 200:
    print("blue" , end=" ")
else:
    print("green", end=" ")
print("pink")
```

Output Screen



17. What is the value of B after running this code? _____

```
B = 1;
loop = 1;
while loop < 8;
    B = B + 1;
    loop = loop+2;
end
```

18. The following Python scripts may contain errors that will prevent them from executing to completion (loops) or that end with a syntax error (red error message). Describe the error or state NO ERROR (do not leave blank).

Question 15

```
D = 2;
while D <= 6:
    D = D + 2;
    if D == 4:
        D = D - 2;
```

Error = _____

19. Write a complete program that has a main function, that asks the user for the number of eggs in a basket. The program reports the number of dozens of eggs in the basket and the number of eggs left over. If the number of eggs is less than one dozen (12 eggs), the output should be just "There are xx eggs". The user input will be an integer. The output should be as given below. Put one comment in this program at the top stating your name.

Sample run:

.How many eggs in the basket? 27
There are 2 dozen eggs and 3 eggs left over.

Sample run:

How many eggs in the basket? 8
There are 8 eggs.

