

Name: \_\_\_\_\_

Grade: \_\_\_\_\_ (of 10)

1. a. Which programming language(s) will be on the PAPER part of the exam?

Python

C

Both

b. Which programming language(s) will you use for the COMPUTER part of the exam?

Python

C

Both

2. Where can you find a study guide for the final exam?

3. When you call a function, memory is allocated for each parameter and initialized to be a copy of the corresponding actual argument.

True or False (circle your choice)

4. If the parameter is a pointer, changing the value of that *pointer* changes the value of the corresponding actual argument.

True or False (circle your choice)

5. If the parameter is a pointer, changing the value of its *pointee* changes the value of the corresponding actual argument's *pointee*.

True or False (circle your choice)

6. When you return from a function, the memory for its parameters and local variables is returned to the system, and hence those variables and the memory in which they were stored can no longer be referenced safely.

True or False (circle your choice)

7. What standard library function do we use **in C** to dynamically allocate memory for data structures like arrays and structures?
  
8. If we dynamically allocated memory to store an array containing 300 **Dog** instances (where **Dog** is a structure type), what would the **declaration** of the variable to reference that memory look like?
  
9. Continuing the previous problem, what single statement would we use to give that variable an appropriate value?
  
10. Continuing the previous problem, assume that there is a **makeDog** function that returns a random instance of the **Dog** structure. Write a loop that initializes the 300 **Dog**'s referenced by your variable of the previous problem, to random **Dog**'s.

11. An object (in Python or any other object-oriented language):

- Knows things about itself
- Can be asked to do things
- Can provide information about itself or other objects that it knows about

Circle all of the above that apply.

12. A C structure instance:

- Knows things about itself
- Can be asked to do things
- Can provide information about itself or other objects that it knows about

Circle all of the above that apply.

13. Objects store information in \_\_\_\_\_.

14. Objects manipulate their information through \_\_\_\_\_.

15. Each object is an instance of some \_\_\_\_\_.

16. Objects are created by calling \_\_\_\_\_.

17. Suppose there is a Cat class whose constructor takes a string that is the name of the Cat. Write the **Python** statement that constructs a new Cat whose name is “Puss in Boots” and stores that Cat instance in the variable named ***shrekCat***.
  
18. In the definition of the Cat class, what is the name of the special function that the statement in the previous problem calls?
  
19. Suppose that the Cat class has a field called **age**. Write the statement that sets ***shrekCat***'s age to 13.
  
20. In the definition of the Cat class, how do you recognize the fields?
  
21. Suppose that the Cat class has a method called **incrementAge**. Write the statement that increments ***shrekCat***'s age.
  
22. What value does the ***self*** parameter get when a constructor or method is called?
  
23. How long do the fields of an object persist?
  
24. Can a method of a class refer to all of the fields of the class? Yes or No (circle your choice)
  
25. Tell your instructor about anything from today's session (or from the course so far) that you found confusing or still have a question about. If none, please write “None”.