LeMoyne-Owen College
Division of Computer Science and Information Technology

Exam 2

Name: _____

Multiple Choices: (5% each) (Circle the correct answer)

1. What is the keyword to **declare a class** in Python?

    a. def

    b. function

    c. create

    d. class

2. What is the name for a constructor in Python?

    a. `same name of class name`

    b. `constructor`

    c. `__init__`

    d. `__str__`

3. Constructors are used to:

    a. build a user interface.

    b. initialize a newly created object.

    c. have free memory.

    d. create a sub-class.

4. An object that has more than one form is referred to as:

    a. polymorphism

    b. inheritance

    c. interface

    d. abstract class

5. Information hiding can also be termed as:

    a. data hiding

    b. encapsulation

    c. inheritance

    d. polymorphism

6. The keyword which is used to access the method or instance variables from the superclass:

    a. super

    b. using

    c. self

    d. this

7. In Python, a class is _____ for a concrete object.

    a. an instance

    b. a distraction

    c. a blueprint

    d. a nuisance

8. What is correct way to instantiate the Dog class below?

```
class Dog:
    def __init__(self, name, age):
        self.name = name
        self.age = age
```

    a. `Dog.__init__("Rufus ", 3)`

    b. `Dog()`

    c. `Dog.create("Rufus ", 3)`

    d. `Dog("Rufus ", 3)`

9. In Python, a function within a class definition is called a:

    a. method

    b. callable

    c. class function

    d. operation

```python
class Dog:
    def walk(self):
        return "*walking*"

    def speak(self):
        return "Woof!"

class Special(Dog):
    def speak(self):
        return "Arff!"

    def talk(self):
        return super().speak()
```

10. According to the above two classes, what will be the output of the following statements?

```python
myDog = Special()
print(myDog.walk())
```

    a. Arff!

    b. *walking*

    c. AttributeError: 'Special' object has no attribute 'walk'

    d. Woof!

11. According to the above two classes, what will be the output of the following statements?

```python
yourDog = Special()
print(yourDog.speak())
```

    a. CanineError: Dog malfunction

    b. *walking*

    c. Arff!

    d. Woof!

12. According to the above two classes, what will be the output of the following statements?

```python
hisDog = Special()
print(hisDog.talk())
```

    a. CanineError: Dog malfunction

    b. *walking*

    c. Arff!

    d. Woof!

Essay Questions: (5% each)

1. What is the job of a constructor?

2. What is the purpose of __str__ method?

3. What are the three fundamental concepts of Object-Oriented Programming?

4. Use selection sort to sort the unsorted list below and show step by step of the procedure.
[32, 40, 53, 20, 60,45,11,13]

5. Use insertion sort to sort the unsorted list below and show step by step of the procedure.

[32, 40, 53, 20, 60,45,11,13]

6. Use merge sort to sort the unsorted list below and show step by step of the procedure.

[32, 40, 53, 20, 60,45,11,13]

7. Write a set of Python codes to initialize an empty list then repeat taking user's numbers 10 times. Store user's 10 numbers in the list that you initialized before.

8. A Vehicle class has three instance variables, **brandName**, **year**, and **price**. Declare a **__str__** method to return an object's information in a sentence as the format below:
   If obj1 has a brand name as **"Honda",** the year is **2020**, the price is **$35,000**, when user prints(obj1), he/she will have the following output:
   The price of 2020 year's Honda vehicle is $35000.