

**a. What is the difference between an Object and a Class?**

An object has a descriptive characteristics (state) and behaviors. It is defined by a class, which is a blueprint of an object. Class uses methods to define the behaviors of the object. A class contains the main method which represents the entire program. Class represents a concept, whereas an object is an instantiation of that concept. Multiple objects can be created from one class definition.

**b. What is the scope of a variable?**

The scope of a variable is its visibility to the program. A variable's scope varies based on the modifying used to define it: private, public, protected.

**c. What are constructors used for?**

Constructors create an instance of a class.

**d. What kind of variables can a static method access?**

A static method can use parameter variables. Parameter variables are variables that are initialized provided that an argument value is given by the calling code.

**e. What does it mean for a method to return a value?**

It hands execution back to method, completing all statements in the method and passing a value through the method after it is completed. The method can then be assigned to a variable and printed, which will return/print the return value within the method.

**f. What is an aggregate object?**

An aggregate object is an object that is made up of other objects.

**g. What is method decomposition?**

Method decomposition is breaking down a large method into several smaller ones. Methods are best meant to be small in order to enhance clarity, therefore large ones are broken down.

**h. Describe the difference between a public and private method.**

A public method can be used/referenced by other codes, whereas private methods could only be accessed by code in the same class.

**i. Explain the difference between actual and formal parameters.**

Formal parameters are parameters that are only known in the function/method. Actual parameters are parameters that are passed by the caller when calling the function/method.

**j. Explain the difference between static and instant variable.**

Static variables are initialized and loaded with the class, where as instance variables are initialized when an object for that class is instantiated. A static variable is defined at the class level whereas an instance variable is defined at an object level. A static variable is to class as a instance variable is to an object.