

# CS6312: Program Construction II [S18]

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Started on	Sunday, January 28, 2018, 11:47 AM
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Completed on	Sunday, January 28, 2018, 11:57 AM
Time taken	9 mins 52 secs
Grade	8.00 out of 10.00 (80%)

Question 1

Correct

1.00 points out of 1.00

Flag question

Given two reference variables t1 and t2, if t1 == t2 is true, t1.equals(t2) must be \_\_\_\_\_.

Select one:

☐ a. false

☒ b. true ✓

Question 2

Correct

1.00 points out of 1.00

Flag question

Object-oriented programming allows you to derive new classes from existing classes. This is called \_\_\_\_\_.

Select one:

☐ a. abstraction

☐ b. generalization

☒ c. inheritance ✓

☐ d. encapsulation

Question 3

Correct

1.00 points out of 1.00

Flag question

Which of the following is incorrect?

Select one:

☐ a. A constructor may be private.

☒ b. A constructor may be static. ✓

☐ c. A constructor may invoke an overloaded constructor.

☐ d. A constructor invokes its superclass no-arg constructor by default if a constructor does not invoke an overloaded constructor or its superclass's constructor.

☐ e. A constructor may invoke a static method.

Question 4

Incorrect

0.00 points out of 1.00

Flag question

Analyze the following code:

```
public class Test {
    public static void main(String[] args) {
        new B();
    }

    class A {
        int i = 7;

        public A() {
            setI(20);
            System.out.println("i from A is " + i);
        }

        public void setI(int i) {
            this.i = 2 * i;
        }
    }

    class B extends A {
        public B() {
            // System.out.println("i from B is " + i);
        }

        public void setI(int i) {
            this.i = 3 * i;
        }
    }
}
```

Select one:

☐ a. The constructor of class A is called and it displays "i from A is 60".

☐ b. The constructor of class A is not called.

☐ c. The constructor of class A is called and it displays "i from A is 40".

☒ d. The constructor of class A is called and it displays "i from A is 7". ✗

Question 5

Correct

1.00 points out of 1.00

Flag question

Analyze the following code:

```
public class Test {
    public static void main(String[] args) {
        B b = new B();
        b.m(5);
        System.out.println("i is " + b.i);
    }

    class A {
        int i;

        public void m(int i) {
            this.i = i;
        }
    }

    class B extends A {
        public void m(String s) {
        }
    }
}
```

Select one:

☒ a. The method m is not overridden in b. B inherits the method m from A and defines an overloaded method m in b. ✓

☐ b. The program has a compilation error, because b.m(5) cannot be invoked since the method m(int) is hidden in B.

☐ c. The program has a compilation error, because m is overridden with a different signature in B.

☐ d. The program has a runtime error on b.i, because i is not accessible from b.

Question 6

Correct

1.00 points out of 1.00

Flag question

Superclasses contain more features than their subclasses.

Select one:

☒ a. false ✓

☐ b. true

Question 7

Correct

1.00 points out of 1.00

Flag question

Which of the following statements are true?

Select one or more:

☒ a. A private method cannot be overridden. If a method defined in a subclass is private in its superclass, the two methods are completely unrelated. ✓

☒ b. Overloading a method is to provide more than one method with the same name but with different signatures to distinguish them. ✓

☒ c. A static method cannot be overridden. If a static method defined in the superclass is redefined in a subclass, the method defined in the superclass is hidden. ✓

☒ d. It is a compilation error if two methods differ only in return type in the same class. ✓

☒ e. To override a method, the method must be defined in the subclass using the same signature and compatible return type as in its superclass. ✓

Question 8

Correct

1.00 points out of 1.00

Flag question

If a data field is declared in the superclass, you may hide it by redeclaring it in the subclass.

Select one:

☒ a. true ✓

☐ b. false

Question 9

Incorrect

0.00 points out of 1.00

Flag question

Analyze the following code:

```
public class Test extends A {
    public static void main(String[] args) {
        Test t = new Test();
        t.print();
    }

    class A {
        String s;

        A(String s) {
            this.s = s;
        }

        public void print() {
            System.out.println(s);
        }
    }
}
```

Select one or more:

☒ a. The program does not compile because Test does not have a default constructor Test(). ✗

☐ b. The program has an implicit default constructor Test(), but it cannot be compiled, because its super class does not have a default constructor. The program would compile if the constructor in the class A were removed.

☐ c. The program compiles, but it has a runtime error due to the conflict on the method name print.

☐ d. The program would compile if a default constructor A(){ } is added to class A explicitly.

Question 10

Correct

1.00 points out of 1.00

Flag question

Suppose you create a class Square to be a subclass of GeometricObject. Analyze the following code:

```
class Square extends GeometricObject {
    double length;

    Square(double length) {
        GeometricObject(length);
    }
}
```

Select one:

☒ a. The program has a compile error because you attempted to invoke the GeometricObject class's constructor illegally. ✓

☐ b. The program compiles fine, but you cannot create an instance of Square because the constructor does not specify the length of the Square.

☐ c. The program compiles fine, but it has a runtime error because of invoking the Square class's constructor illegally.

Finish review