# CS6312: Program Construction II [S18]



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| Started on | Saturday, February 3, 2018, 7:43 PM |
| State | Finished |
| Completed on | Saturday, February 3, 2018, 7:53 PM |
| Time taken | 9 mins 58 secs |
| Grade | 9.00 out of 10.00 (90%) |

**Question 1**
Correct
1.00 points out of 1.00
Flag question

What is the output of the following code?

```
public class Test {
  public static void main(String[] args) {
    Object o1 = new Object();
    Object o2 = new Object();
    System.out.print(o1 == o2) + " " + (o1.equals(o2));
  }
}
```

Select one:
- a. false false ✓
- b. true false
- c. false true
- d. true true

**Question 2**
Correct
1.00 points out of 1.00
Flag question

Analyze the following code:

```
Circle c = new Circle (5);
Cylinder c = cy;
```

Select one:
- a. The code is fine.
- b. The code has a runtime error.
- c. The code has a compile error. ✓

**Question 3**
Correct
1.00 points out of 1.00
Flag question

You can always successfully cast a subclass to a superclass.

Select one:
- a. true ✓
- b. false

**Question 4**
Correct
1.00 points out of 1.00
Flag question

Analyze the following code:

```
// Program 1:
public class Test {
  public static void main(String[] args) {
    Object a1 = new A();
    Object a2 = new A();
    System.out.println(a1.equals(a2));
  }
}

class A {
  int x;

  public boolean equals(Object a) {
    return this.x == ((A)a).x;
  }
}

// Program 2:
public class Test {
  public static void main(String[] args) {
    Object a1 = new A();
    Object a2 = new A();
    System.out.println(a1.equals(a2));
  }
}

class A {
  int x;

  public boolean equals(A a) {
    return this.x == a.x;
  }
}
```

Select one:
- a. Program 1 displays true and Program 2 displays true
- b. Program 1 displays true and Program 2 displays false ✓
- c. Program 1 displays false and Program 2 displays false
- d. Program 1 displays false and Program 2 displays true

**Question 5**
Correct
1.00 points out of 1.00
Flag question

The equals method is defined in the Object class. Which of the following is correct to override it in the String class?

Select one:
- a. public static boolean equals(Object other)
- b. public boolean equals(String other)
- c. public boolean equals(Object other) ✓
- d. public static boolean equals(String other)

**Question 6**
Correct
1.00 points out of 1.00
Flag question

You can assign _____ to a variable of Object[] type.

Select one or more:
- ✓ a. new String[100] ✓
- b. new char[100]
- c. new double[100]
- ✓ d. new java.util.Date[100] ✓
- e. new int[100]

**Question 7**
Correct
1.00 points out of 1.00
Flag question

Analyze the following code:

```
public class Test {
  public static void main(String[] args) {
    Object a1 = new A();
    Object a2 = new Object();
    System.out.println(a1);
    System.out.println(a2);
  }
}

class A {
  int x;

  public String toString() {
    return "A x x is " + x;
  }
}
```

Select one or more:
- a. When executing System.out.println(a1), the toString() method in the Object class is invoked.
- ✓ b. When executing System.out.println(a1), the toString() method in the A class is invoked. ✓
- ✓ c. When executing System.out.println(a2), the toString() method in the Object class is invoked. ✓
- d. The program cannot be compiled, because System.out.println(a1) is wrong and it should be replaced by System.out.println(a1.toString()).

**Question 8**
Incorrect
0.00 points out of 1.00
Flag question

Analyze the following code:

```
// Program 1:
public class Test {
  public static void main(String[] args) {
    Circle circle1 = new Circle();
    Circle circle2 = new Circle();
    System.out.println(circle1.equals(circle2));
  }
}

class Circle {
  double radius;

  public boolean equals(Circle circle) {
    return this.radius == circle.radius;
  }
}

// Program 2:
public class Test {
  public static void main(String[] args) {
    Circle circle1 = new Circle();
    Circle circle2 = new Circle();
    System.out.println(circle1.equals(circle2));
  }
}

class Circle {
  double radius;

  public boolean equals(Object circle) {
    return this.radius ==
      ((Circle)circle).radius;
  }
}
```

Select one:
- a. Program 1 displays false and Program 2 displays false
- b. Program 1 displays false and Program 2 displays true
- c. Program 1 displays true and Program 2 displays false ✗
- d. Program 1 displays true and Program 2 displays true

**Question 9**
Correct
1.00 points out of 1.00
Flag question

In OOP, a reference variable can reference a subtype object. This is called _____.

Select one:
- a. encapsulation
- b. abstraction
- c. polymorphism ✓
- d. inheritance

**Question 10**
Correct
1.00 points out of 1.00
Flag question

Analyze the following code:

```
// Program 1:
public class Test {
  public static void main(String[] args) {
    Object a1 = new A();
    Object a2 = new A();
    System.out.println(a1.equals(a2));
  }
}

class A {
  int x;

  public boolean equals(A a) {
    return this.x == a.x;
  }
}

// Program 2:
public class Test {
  public static void main(String[] args) {
    A a1 = new A();
    A a2 = new A();
    System.out.println(a1.equals(a2));
  }
}

class A {
  int x;

  public boolean equals(A a) {
    return this.x == a.x;
  }
}
```

Select one:
- a. Program 1 displays false and Program 2 displays true ✓
- b. Program 1 displays true and Program 2 displays false
- c. Program 1 displays true and Program 2 displays true
- d. Program 1 displays false and Program 2 displays false

Finish review