

1) Given the declaration `Circle[] x = new Circle[10]`, which of the following statement is most accurate?

- A. x contains an array of ten int values.
- B. x contains an array of ten objects of the Circle type.
- C. x contains a reference to an array and each element in the array can hold a reference to a Circle object.
- D. x contains a reference to an array and each element in the array can hold a Circle object.

2) What is the value of `myCount.count` displayed? What is the value of `times` displayed?

```
public class Test {
    public static void main(String[] args) {
        Count myCount = new Count();
        int times = 0;

        for (int i=0; i<100; i++)
            increment(myCount, times);

        System.out.println("myCount.count = " + myCount.count);
        System.out.println("times = " + times);
    }

    public static void increment(Count c, int times) {
        c.count++;
        times++;
    }
}

class Count {
    int count;

    Count(int c) {
        count = c;
    }

    Count() {
        count = 1;
    }
}
```

3) Which of the following statements are true?

- A. Multiple constructors can be defined in a class.
- B. Constructors do not have a return type, not even void.
- C. Constructors must have the same name as the class itself.
- D. Constructors are invoked using the new operator when an object is created.

4) Which of the following statements are true?

- A. A default constructor is provided automatically if no constructors are explicitly declared in the class.
- B. At least one constructor must always be defined explicitly.
- C. Every class has a default constructor.
- D. The default constructor is a no-arg constructor.

4)

```
public class Test {
    int x;

    public Test(String t) {
        System.out.println("Test");
    }

    public static void main(String[] args) {
        Test test = new Test();
        System.out.println(test.x);
    }
}
```

- A. The program has a compile error because System.out.println method cannot be invoked from the constructor.
- B. The program has a compile error because x has not been initialized.
- C. The program has a compile error because you cannot create an object from the class that defines the object.
- D. The program has a compile error because Test does not have a default constructor.

5)

```
public class Test {
    public static void main(String[] args) {
        double radius;
        final double PI= 3.15169;
        double area = radius * radius * PI;
        System.out.println("Area is " + area);
    }
}
```

- A. The program has compile errors because the variable radius is not initialized.
- B. The program has a compile error because a constant PI is defined inside a method.
- C. The program has no compile errors but will get a runtime error because radius is not initialized.
- D. The program compiles and runs fine.

6)

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

class A {
    String s;

    A(String newS) {
        s = newS;
    }

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

- A. The program has a compilation error because class A is not a public class.
- B. The program has a compilation error because class A does not have a no-arg constructor.
- C. The program compiles and runs fine and prints nothing.
- D. The program would compile and run if you change A a = new A() to A a = new A("5").