

REC-CIS

## CS23333-Object Oriented Programming Using Java-2023

## Quiz navigation

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## Question 1

Complete

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Say that there are three classes: Computer, AppleComputer, and IBMComputer. What are the likely relationships between these classes?

- ☐ a. IBMComputer is the superclass, AppleComputer and Computer are subclasses of IBMComputer.
- ☐ b. Computer, AppleComputer and IBMComputer are sibling classes.
- ☐ c. Computer is a superclass, AppleComputer is a subclasses of Computer, and IBMComputer is a subclas of AppleComputer
- ☒ d. Computer is the superclass, AppleComputer and IBMComputer are subclasses of Computer.

## Question 2

Complete

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What restriction is there on using the super reference in a constructor?

- ☒ a. It must be used in the first statement of the constructor.
- ☐ b. Only one child class can use it.
- ☐ c. It can only be used in the parent's constructor.
- ☐ d. It must be used in the last statement of the constructor.

Question **3**

Complete

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Say that class Rodent has a child class Rat and another child class Mouse. Class Mouse has a child class PocketMouse. Examine the following

```
Rodent rod;
```

```
Rat rat = new Rat();
```

```
Mouse mos = new Mouse();
```

```
PocketMouse pkt = new PocketMouse();
```


Which one of the following will cause a compiler error?

- ☐ a. rod = rat;
- ☐ b. rod = mos;
- ☒ c. pkt = rat;
- ☐ d. pkt = null;

Question **4**

Complete

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Which one of the following statement is false?

- ☐ a. The subclass of a non-abstract class can be declared abstract.
- ☒ b. All members of the superclass are inherited by the subclass.
- ☐ c. A final class cannot be abstract.
- ☐ d. A top level class in which all the members are declared private, can be declared public.

Question **5**

Complete

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Given the following:

```
class Vehicle { }  
class FourWheeler extends Vehicle { }  
class Car extends FourWheeler { }  
public class TestVehicle  
{  
    public static void main(String[] args)  
    {  
        Vehicle v = new Vehicle();  
        FourWheeler f = new FourWheeler();  
        Car c = new Car();  
        xxxxxxx  
    }  
}
```

Which of the following statement is legal, which can be substituted for xxxxxxx?

- ☐ a. c = f;
- ☒ b. v = c;
- ☐ c. c = v;
- ☐ d. f = v;

Question **6**

Complete

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☐ d. `f = v;`

```
class A { A(int i) {} } // 1
```

```
class B extends A {} // 2
```

Which one of the following statements is correct?

- ☐ a. compiler attempts to create a default constructor for class A.
- ☐ b. Compiles successfully without any errors.
- ☐ c. Compile-time error at 1.
- ☒ d. Compile-time error at 2.

Question **7**

Complete

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Which statement is true?

- ☐ a. If `super()` is the first statement in the body of a constructor, then `this()` can be declared as the second statement.
- ☒ b. If both a subclass and its superclass do not have any declared constructors, the implicit default constructor of the subclass will call `super()` when run.
- ☐ c. A `super()` or `this()` call must always be provided explicitly as the first statement in the body of a constructor.
- ☐ d. If neither `super()` nor `this()` is declared as the first statement in the body of a constructor, then `this()` will implicitly be inserted as the first statement.

Question **8**

Complete

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Consider the following class heirarchies

```
class A { }
```

```
class B extends A { }
```

```
class C extends B { }
```


And the following method declaration

```
public B doSomething  {
```

```
    // some valid code fragments
```

```
    return xx;
```

```
}
```

Objects of which class ( from the heirarchy shown above ) can be safely substituted in place of xx in the method doSomething  ?

- ☐ a. An array object of class C
- ☐ b. An array object of class B
- ☐ c. Object of class A
- ☒ d. Object of class C

Question **9**

Complete

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Which statement is true about the use of modifiers?

- ☒ a. You cannot specify accessibility of local variables. They are only accessible within the block in which they are declared.
- ☐ b. Subclasses of a class must reside in the same package as the class they extend.
- ☐ c. If no accessibility modifier (public, protected, and private) is specified for a member declaration, the member is only accessible for classes in the same package and subclasses of its class in any package.
- ☐ d. Local variables can be declared static.

Question **10**

Complete

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Which statement is true?

- ☐ a. If neither `super()` nor `this()` is declared as the first statement in the body of a constructor, then `this()` will implicitly be inserted as the first statement.
- ☐ b. If `super()` is the first statement in the body of a constructor, then `this()` can be declared as the second statement.
- ☐ c. A `super()` or `this()` call must always be provided explicitly as the first statement in the body of a constructor.
- ☒ d. If both a subclass and its superclass do not have any declared constructors, the implicit default constructor of the subclass will call `super()` when run.

Question **11**

Complete

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 Flag question

```
1. public class TestPoly {  
2.     public static void main(String [] args ){  
3.         Parent p = new Child();  
4.     }  
5. }  
6.  
7. class Parent {  
8.     public Parent() {  
9.         super();  
10.        System.out.println("instantiate a parent");  
11.    }  
12. }  
13.  
14. class Child extends Parent {  
15.     public Child() {  
16.         System.out.println("instantiate a child");  
17.     }  
18. }
```

What is the result?

- ☐ a. instantiate a parent
- ☐ b. instantiate a child  
instantiate a parent
- ☒ c. instantiate a parent  
instantiate a child
- ☐ d. instantiate a child

- ☐ d. instantiate a child

Question **12**

Complete

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Which of the following statements are incorrect?

- ☐ a. public members of class can be accessed by any code in the program.
- ☐ b. private members of class can only be accessed by other members of the class.
- ☒ c. private members of class can be inherited by a sub class, and become protected members in sub class.
- ☐ d. protected members of a class can be inherited by a sub class, and become private members of the sub class.

Question **13**

Complete

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What type of inheritance does Java have?

- ☐ a. class inheritance
- ☐ b. double inheritance
- ☐ c. multiple inheritance
- ☒ d. single inheritance

Question **14**

Complete

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Which of the following modifiers can be applied to a constructor?

- ☐ a. transient
- ☐ b. synchronized
- ☒ c. protected
- ☐ d. static



Question **15**

Complete

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1.00[Flag question](#)

Given the following,

```
1. class B extends A {  
2.   int getID() {  
3.     return id;  
4.   }  
5. }  
6. class C {  
7.   public int name;  
8. }  
9. class A {  
10.   C c = new C();  
11.   public int id;  
12. }
```

Which one is correct about instances of the classes listed above?

- ☒ a. B has-a A
- ☐ b. A is-a B
- ☐ c. B has-a C
- ☐ d. C is-a A

Question **16**

Complete

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1.00[Flag question](#)

A class Animal has a subclass Mammal. Which of the following is true:

- ☐ a. Because of single inheritance, Animal can have only one subclass.
- ☐ b. Because of single inheritance, Mammal can have no siblings.
- ☒ c. Because of single inheritance, Mammal can have no other parent than Animal.
- ☐ d. Because of single inheritance, Mammal can have no subclasses.

- ☐ d. Because of single inheritance, Mammal can have no subclasses.

Question **17**  
Complete  
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1.00  
[Flag question](#)

Say that class Rodent has a child class Rat and another child class Mouse. Class Mouse has a child class PocketMouse. Examine the following

Rodent rod;

Rat rat = new Rat();

Mouse mos = new Mouse();

PocketMouse pkt = new PocketMouse();

Which of the following array declarations is correct for an array that is expected to hold up to 10 objects of types Rat, Mouse, and PocketMouse?

- ☐ a. Rodent[] array = new Rat[10];
- ☐ b. Rodent[10] array;
- ☐ c. Rat[] array = new Rat[10];
- ☒ d. Rodent[] array = new Rodent[10];

Question **18**  
Complete  
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1.00  
[Flag question](#)

Given the following:

```
1. public class MyClass {  
2.     public static void main(String[] args) {  
3.         Derived d = new Derived("hello");  
4.     }  
5. }  
6.  
7. class Base {  
8.     Base() { this("a", "b"); }  
9.  
10.    Base(String x, String y) { System.out.println(x + y); }  
11. }  
12.  
13. class Derived extends Base {  
14.     Derived(String s) { System.out.println(s); }  
15. }
```

What is the output?

- ☐ a. It will print ab
- ☒ b. It will print ab followed by hello.
- ☐ c. It will print hello.
- ☐ d. It will print hello followed by ab.

Question **19**  
Complete  
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1.00  
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Which statement is true?

- ☐ a. Every Java object has a public method named length.
- ☐ b. Inheritance defines a has-a relationship between a superclass and its subclasses.
- ☒ c. Every Java object has a public method named equals.
- ☐ d. A final class can be extended by any number of classes

Question **20**

Complete

Marked out of 1.00

[Flag question](#)

Given the following,

```
1. class MySuper {
2.     public MySuper(int i) {
3.         System.out.println("super " + i);
4.     }
5. }
6.
7. public class MySub extends MySuper {
8.     public MySub() {
9.         super(2);
10.        System.out.println("sub");
11.    }
12.
13.    public static void main(String [] args) {
14.        MySuper sup = new MySub();
15.    }
16. }
```

What is the result?

- ☐ a. Compilation fails at line 14.
- ☐ b. sub  
super 2
- ☒ c. super 2  
sub
- ☐ d. Compilation fails at line 9.

Question **21**

Complete

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Given the following code:

```
class B {
    int m = 7;
}

class D extends B {
    int m = 9;
}

public class TestBaseDerived {
    public static void main(String[] args) {
        B b = new B();
        D d = new D();
        B bd = new D();
        System.out.printf("%d %d %d", b.m, d.m, bd.m);
    }
}
```

What will be the output on executing the above code?

- ☒ a. 7 9 7
- ☐ b. 9 9 7

Question **22**  
Complete  
Marked out of 1.00  
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Which of the following modifiers cannot be applied to a top level class?

- ☐ a. public
- ☐ b. final
- ☐ c. abstract
- ☒ d. private

Question **23**  
Complete  
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[Flag question](#)

Which of the following is correct syntax for defining a new class Jolt based on the superclass SoftDrink?

- ☐ a. class Jolt isa SoftDrink ( //additional definitions go here )
- ☒ b. class Jolt extends SoftDrink ( //additional definitions go here )
- ☐ c. class Jolt defines SoftDrink { //additional definitions go here }
- ☐ d. class Jolt implements SoftDrink ( //additional definitions go here )

Question **24**  
Complete  
Marked out of 1.00  
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Given the following code:

```
class B { int m = 7; }  
class D extends B { int m = 9; }  
public class TestBaseDerived {  
    public static void main(String[] args) {  
        B b = new B();  
        D d = new D();  
        B bd = new D();  
        System.out.printf("%d %d %d", b.m, d.m, bd.m);  
    }  
}
```

What will be the output on executing the above code ?

- ☐ a. 9 7 9
- ☐ b. 9 9 7
- ☒ c. 7 9 7
- ☐ d. 7 9 9

Question **25**  
Complete  
Marked out of 1.00  
[Flag question](#)

Which one of the following statement is false?

- ☐ a. The subclass of a non-abstract class can be declared abstract.
- ☒ b. All members of the superclass are inherited by the subclass.
- ☐ c. A top level class in which all the members are declared private, can be declared public.
- ☐ d. A final class cannot be abstract.

Question **26**  
Complete  
Marked out of 1.00  
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Given a method in a class, what access modifier do you use to restrict access to that method to only the other members of the same class?

- ☐ a. static
- ☐ b. volatile
- ☐ c. protected
- ☒ d. private

Question **27**  
Complete  
Marked out of  
1.00  
[Flag question](#)

Given the following code, which is the simplest print statement that can be inserted into the print() method?

```
// Filename: MyClass.java
public class MyClass extends MySuperclass {
    public static void main(String[] args) {
        MyClass object = new MyClass();
        object.print();
    }
    public void print() {
        // INSERT CODE HERE THAT WILL PRINT
        // THE "Hello, world!" STRING FROM THE Message
        // CLASS.
    }
}
class MySuperclass {
    Message msg = new Message();
}
class Message {
    // The message that should be printed:
    String text = "Hello, world!";
}
```

- ☐ a. System.out.println(msg.text);
- ☒ b. System.out.println(super.msg.text);
- ☐ c. System.out.println(Message.text);
- ☐ d. System.out.println(object.msg.text);

Question **28**  
Complete  
Marked out of  
1.00  
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Assuming Card is the base class of Valentine, Holiday and Birthday, in order for the following code to be correct, what must be the type of the reference variable card?

```
_____ card;
card = new Valentine("Joe", 14);
card.greeting();
card = new Holiday("Bob");
card.greeting();
card = new Birthday("Emily", 12);
card.greeting();
```

- ☐ a. Valentine
- ☒ b. Card
- ☐ c. Birthday
- ☐ d. Holiday

Question **29**  
Complete  
Marked out of  
1.00  
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What restriction is there on using the super reference in a constructor?

- ☐ a. It must be used in the last statement of the constructor.
- ☒ b. It must be used in the first statement of the constructor.
- ☐ c. Only one child class can use it.
- ☐ d. It can only be used in the parent's constructor.

Question **30**

Complete

Marked out of  
1.00

[Flag question](#)

Given the following code, which is the simplest print statement that can be inserted into the print() method?

```
// Filename: MyClass.java
public class MyClass extends MySuperclass {
    public static void main(String[] args) {
        MyClass object = new MyClass();
        object.print();
    }

    public void print() {
        // INSERT CODE HERE THAT WILL PRINT
        // THE "Hello, world!" STRING FROM THE Message
        // CLASS.
    }
}

class MySuperclass {
    Message msg = new Message();
}

class Message {
    // The message that should be printed:
    String text = "Hello, world!";
}
```

- ☐ a. System.out.println(msg.text);
- ☐ b. System.out.println(object.msg.text);
- ☒ c. System.out.println(super.msg.text);
- ☐ d. System.out.println(Message.text);

Question **31**

Complete

Marked out of  
1.00

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The concept of inheritance provides the idea of

- ☒ a. reusability
- ☐ b. Taking more than one form
- ☐ c. all of these
- ☐ d. data hiding

Question **32**  
Complete  
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1.00  
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Given the following code, which of these constructors can be added to MySub class without causing a compile-time error?

```
class MySuper {  
    int number;  
    MySuper(int i) { number = i; }  
}  
  
class MySub extends MySuper {  
    int count;  
    MySub(int cnt, int num) {  
        super(num);  
        count = cnt;  
    }  
    // INSERT ADDITIONAL CONSTRUCTOR HERE  
}
```

- ☐ a. MySub(int cnt) { super(cnt); this(cnt, 0); }
- ☐ b. MySub() {}
- ☒ c. MySub(int cnt) { count = cnt; super(cnt); }
- ☐ d. MySub(int cnt) { this(cnt, cnt); }

Question **33**  
Complete  
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1.00  
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Analyse the following 2 classes and select the correct statement.

```
class A {  
    private int x = 0;  
    static int y = 1;  
    protected int q = 2;  
}  
  
class B extends A {  
    void method() {  
        System.out.println(x);  
        System.out.println(y);  
        System.out.println(q);  
    }  
}
```

- ☐ a. The code compiles correctly, and the following is displayed:012
- ☒ b. The code fails to compile because the variable x is not available to class B.
- ☐ c. The code fails to compile because you can't subclass a class with protected variables.
- ☐ d. The code fails to compile because you can't subclass a class with static variables.

Question **34**

Complete

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1.00

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Can an object of a child type be assigned to a variable of the parent type? For example,

Card crd;

BirthDay bd = new BirthDay("Lucinda", 42);

crd = bd; // is this correct?

- ☐ a. No-but a object of parent type can be assigned to a variable of child type.
- ☒ b. Yes-an object can be assigned to a reference variable of the parent type.
- ☐ c. No-there must always be an exact match between the variable and the object types.
- ☐ d. Yes-any object can be assigned to any reference variable.

Question **35**

Complete

Marked out of  
1.00

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Given the following:

```
1. class Animal {  
2.   String name = "No name";  
3.   public Animal(String nm) { name = nm; }  
4. }  
5.  
6. class DomesticAnimal extends Animal {  
7.   String animalFamily = "nofamily";  
8.   public DomesticAnimal(String family) { animalFamily = family; }  
9. }  
10.  
11. public class AnimalTest {  
12.   public static void main(String[] args) {  
13.     DomesticAnimal da = new DomesticAnimal("cat");  
14.     System.out.println(da.animalFamily);  
15.   }  
16. }
```

What is the result ?

- ☒ a. Compilation fails due to an error in line 8.
- ☐ b. cat
- ☐ c. nofamily
- ☐ d. An exception is thrown at runtime.

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