# Object Oriented Programming

## Topic: Interfaces

## MCQs BANK No.: 8

## Instructions:

This MCQs Bank contains question and solution on adjacent(even-odd) pages. First try to solve the MCQ by yourself, then look for the solution.

Best viewed in “single page view” in PDF viewer.

# MCQ No: 1

In interfaces, none of the methods are implemented. True or False

a) True
b) False

# MCQ No: 1 (Solution)

**Ans:** a) True

**Explanation:**

Interfaces are similar to abstract classes, but differ in their functionality. In interfaces, none of the methods are implemented means interfaces defines methods without body.

Interfaces are syntactically similar to classes, but they lack instance variables, and their methods are declared without any body.

# MCQ No: 2

What is an interface?

a) An interface is a collection of constants and method declarations.

b) An interface is a class that a child class can extend.

c) An interface is a collection of GUI components.

d) An interface is the collection of public methods of a class.

# MCQ No: 2 (Solution)

**Ans:** a) An interface is a collection of constants and method declarations.

**Explanation:** An interface is a collection of constants and method declarations.

Interfaces are similar to abstract classes, but differ in their functionality. In interfaces, none of the methods are implemented means interfaces defines methods without body.

# MCQ No: 3

Can an interface ever contain method bodies?

a) No
b) Yes.
c) Sometimes.
d) Always.

# MCQ No: 3 (Solution)

**Ans:** a) No

**Explanation:**

An interface is the collection of public methods of a class.

# MCQ No: 4

Interfaces can contain final variables, which must be initialized with values. True or False

a) True

b) False

# MCQ No: 4 (Solution)

**Ans:** a) True

**Explanation:**

Interfaces are syntactically similar to classes, but they lack instance variables, and their methods are declared without any body. But, it can contain final variables, which must be initialized with values. Once it is defined, any number of classes can implement an interface.

# MCQ No: 5

One class can implement _____ interfaces. Fill in the blank.

a) only one
b) any number of
c) upto 3
d) upto 2

# MCQ No: 5 (Solution)

**Ans:** b) any number of

**Explanation:**

One class can implement any number of interfaces. If we are implementing an interface in a class we must implement all the methods defined in the interface as well as a class can also implement its own methods.

# MCQ No: 6

Any class that includes an interface must implement all of the methods. True or False

a) True

b) False

# MCQ No: 6 (Solution)

**Ans:** a) True

**Explanation:** Yes, it is mandatory to implement all the methods in a class that implements an interface until and unless that class is declared as an abstract class. Implemention every method defined by the interface is mandatory. When a class implements an interface, it is essentially signing a contract. Either the class must implement all the methods declared in the interface and its superinterfaces, or the class must be declared abstract. The method signature — the name and the number and type of arguments — in the class must match the method signature as it appears in the interface.

# MCQ No: 7

Variables declaed inside interfaces are implicitly final and static. True or False

a) True

b) False

# MCQ No: 7 (Solution)

**Ans:** a) True

## Explanation:

Variables can be declared inside interface declarations. They are implicitly final and static, means they can not be changed by implementing it in a class.

Interface variables are static because java interfaces cannot be instantiated on their own. The value of the variable must be assigned in a static context in which no instance exists.

The final modifier ensures the value assigned to the interface variable is a true constant that cannot be re-assigned.

In other words, interfaces can declare only constants, not instance variables.

# MCQ No: 8

To implement an interface, include the _____ keyword in a class definition, and then create the methods
declared by the interface. Fill in the blank.

a) extends
b) implements
c) import
d) default

# MCQ No: 8 (Solution)

**Ans:** b) implements

**Explanation:**

Once an interface has been defined, one or more classes can implement that interface.

To implement an interface, include the implements clause in a class definition, and then create the methods declared by the interface.

# MCQ No: 9

If a class implements from more than one interface, names are separated by _____. Fill in the blank.

a) underscore
b) semicolon
c) comma
d) white space

# MCQ No: 9 (Solution)

**Ans:** c) comma

**Explanation:** If a class implements from more than one interface, names are separated by comma. Your class can implement more than one interface (the Java platform supports multiple inheritance for interfaces), so the implements keyword is followed by a comma-separated list of the interfaces implemented by the class.

# MCQ No: 10

The methods that implement an interface must be declared as _____. Fill in the blank.

a) private
b) public
c) protected
d) any one of the above

# MCQ No: 10 (Solution)

**Ans:** b) public

**Explanation:** The methods that implement an interface must be declared as public. The type-signature of implementing method must match exactly the type signature specified in the interface. The class that implements the interface must declare the methods are public so that the instances of the class can access them, if those methods are defined with some different access specifier then the instances of the class are able to access those methods. It is possible for classes that implement interfaces to define additional members of their own.

# MCQ No: 11

If a class implements an interface but does not fully implement the method defined by that interface, then that class must be declared as _____ . Fill in the blank.

a) interface
b) abstract
c) static
d) final

# MCQ No: 11 (Solution)

**Ans:** b) abstract

**Explanation:**

If a class implements an interface but does not fully implement the method defined by that interface, then that class must be declared as abstract. Partial Implementation of Interface is allowed only if the class is declared as abstract. If we want to implement an interface in a class we have to implement all the methods defined in the interface.

# MCQ No: 12

One can declare variable as object references that uses an interface rather than a class type. True or False

a) True
b) False

# MCQ No: 12 (Solution)

**Ans:** a) True

## Explanation:

One can declare variable as object references that uses an interface rather than a class type.
When you call a method through one of these references, the correct version will be called based on the actual instance of the interface being referred to. When you define a new interface, you are defining a new reference data type. You can use interface names anywhere you can use any other data type name. If you define a reference variable whose type is an interface, any object you assign to it must be an instance of a class that implements the interface.

# MCQ No: 13

When a class implements an interface that inherits another interface, it must provide implementation of all methods defined within the interface inheritance. True or False

a) True
b) False

# MCQ No: 13 (Solution)

**Ans:** a) True

**Explanation:**

Any class that implements an interface must implement all methods defined by that interface, including any that inherited from other interfaces.

# MCQ No: 14

When a class implements an interface, what must it do?

a) It must redefine each constant from the interface.
b) It must declare and provide a method body for each method in the interface.
c) It must declare a variable for each constant in the interface.
d) It must include a private method for each method in the interface.

# MCQ No: 14 (Solution)

**Ans:** b) It must declare and provide a method body for each method in the interface.

**Explanation:** When a class implements an interfaces, it must declare and provide a method body for each method in the interface.

# MCQ No: 15

Which of the following is true?

a) A child class can extend a parent or implement an interface, but not do both.

b) A child class can extend just one parent and can implement just one interface.

c) A child class can extend just one parent and can implement zero or more interfaces.

d) A child class can extend zero or more parents, and can implement zero or more interfaces.

# MCQ No: 15 (Solution)

**Ans:** c) A child class can extend just one parent and can implement zero or more interfaces.

**Explanation:**

In Java, (unlike with humans) children inherit characteristics from just one parent. This is called single inheritance. Java does not support "multiple inheritance" (a class can only inherit from one superclass). However, it can be achieved with interfaces, because the class can implement multiple interfaces. Note: To implement multiple interfaces, separate them with a comma.

# MCQ No: 16

Is the following a correct way to start out a class definition:
public class SomeClass
implements MyInterface

a) No---SomeClass must also extend a base class.
b) No---SomeClass cannot be public if it implements an interface
c) Yes--SomeClass is a child of MyInterface
d) Yes--SomeClass is automatically a child of the class Object.

# MCQ No: 16 (Solution)

**Ans:** d) Yes--SomeClass is automatically a child of the class Object.

**Explanation:**

In the absence of any other explicit superclass, every class is implicitly a subclass of Object . Classes can be derived from classes that are derived from classes that are derived from classes, and so on, and ultimately derived from the topmost class, Object.

# MCQ No: 17

Look at the following interface

```
interface Taxable { double taxRate = 0.06; double calculateTax(); }
```

Is the interface correct?

a) No---because it contains a variable and interfaces cannot contain variables.

b) No---because the interface cannot contain a method that returns a value.

c) Yes--taxRate will automatically be a constant since it is in an interface.

d) Yes--the method body will automatically be filled in.

# MCQ No: 17 (Solution)

**Ans:** c) Yes--taxRate will automatically be a constant since it is in an interface.

**Explanation:**

Interface variables are static because java interfaces cannot be instantiated on their own. The value of the variable must be assigned in a static context in which no instance exists. The final modifier ensures the value assigned to the interface variable is a true constant that cannot be re-assigned.

# MCQ No: 18

Can an interface name be used as the type of a variable, like this: public static void main( String[] args ) { SomeInterface x; ... }

a) No---a variable must always be an object reference type.

b) No---a variable must always be an object reference type or a primitive type.

c) No---a variable must always be a primitive type.

d) Yes--the variable can refer to any object who's class implements the interface.

# MCQ No: 18 (Solution)

**Ans:** d) Yes--the variable can refer to any object who's class implements the interface.

**Explanation: None**

# MCQ No: 19

Is it OK if a class definition implements two interfaces, each of which has the same definition for the constant PI?

a) No---if a class implements several interfaces, each constant must be defined in only one interface.

b) No---a class may not implement more than one interface.

c) Yes--since the definitions are the same it will not matter.

d) Yes--the more accurate definition of the two will override the other.

# MCQ No: 19 (Solution)

**Ans:** a) No---if a class implements several interfaces, each constant must be defined in only one interface.

**Explanation: None**

# MCQ No: 20

Can an interface be given the private access modifier?

a) No---then the interface could never be used.

b) No---since only private classes could use the interface.

c) Yes--this would make all of its methods and constants private.

d) Yes--this would mean that only classes in the same file could use the interface.

# MCQ No: 20 (Solution)

**Ans:** a) No---then the interface could never be used.

**Explanation: None**

# MCQ No: 21

Can an interface extend another interface?

a) No---only classes can be extended.

b) No---interfaces can not be part of a hierarchy.

c) Yes--since all interfaces automatically extend Object.

d) Yes.

# MCQ No: 21 (Solution)

**Ans:** d) Yes.

**Explanation: None**

# MCQ No: 22

Which of the following is the correct way of implementing an interface salary by class manager?

a) class manager extends salary {}
b) class manager implements salary {}
c) class manager imports salary {}
d) none of the mentioned

# MCQ No: 22 (Solution)

**Ans:** b) class manager implements salary {}

**Explanation:**

**None**