



NPTEL Online Certification Courses
Indian Institute of Technology Kharagpur

PROGRAMMING IN JAVA

Assignment3

TYPE OF QUESTION: MCQ

Number of questions:10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Which of the following statement(s) is/are correct about the constructor?

- a. Constructors cannot be synchronized in Java.
- b. Java does not provide a default copy constructor.
- c. A constructor cannot be overloaded.
- d. “this” or “super” can be used in a constructor.

Correct Answer: a, b, d

Detailed Solution:

We can overload constructors just like methods in Java.

QUESTION 2 :

Which of the following statement(s) is/are true?

- a. You can write a new instance method in the subclass with the same signature as the one in the superclass, thus overriding it.
- b. You can write a new static method in the subclass with the same signature as the one in the superclass, thus hiding it.
- c. A subclass inherits all of its parent's public and protected members, no matter what package the subclass is in.
- d. You cannot declare new methods in the subclass that are not in the superclass.

Correct Answer: a, b, c



NPTEL Online Certification Courses
Indian Institute of Technology Kharagpur

Detailed Solution:

You can declare new methods in the subclass that are not in the superclass.

The distinction between hiding a static method and overriding an instance method has important implications:

The version of the overridden instance method that gets invoked is in the subclass. The version of the hidden static method invoked depends on whether it is invoked from the superclass or the subclass.

QUESTION 3:

Consider the following piece of code.

```
class Test{
    void exam(){}
}

public class Test1 extends Test {
    _____ void exam(){} // insert correct keyword
    public static void main(String[] args) {
        System.out.println(" Correct");
    }
}
```

Fill in the blank with the appropriate keyword(s) from the list given below so that the program compiles successfully.

- a. abstract
- b. final
- c. default
- d. public

Correct Answer: b, d

Detailed Solution:

final, public are the correct keyword in this case.



NPTEL Online Certification Courses
Indian Institute of Technology Kharagpur

QUESTION 4:

How many instances of abstract class can be created?

- a. 0
- b. 1
- c. 2
- d. Multiple

Correct Answer: a

Detailed Solution:

An abstract class cannot be instantiated. So it will have 0 instances.

QUESTION 5:

Structuring a Java class such that only methods within the class can access its instance variables is referred to as _____.

- a. object orientation
- b. inheritance
- c. platform independence
- d. encapsulation

Correct Answer: d

Detailed Solution:

Encapsulation removes access to a class's instance variables from processes outside the class, making Option D the correct answer.

QUESTION 6:

Which of the following statement(s) is/are true?



NPTEL Online Certification Courses
Indian Institute of Technology Kharagpur

- a. A final method cannot be overridden in a subclass.
- b. The advantage of private static methods is that they can be reused later if you need to reinitialize the class variable.
- c. Class methods cannot use this keyword as there is no instance for this to refer to.
- d. A final method can be overridden in a subclass.

Correct Answer: a, b, c

Detailed Solution:

A final method cannot be overridden in a subclass. Class methods cannot use this keyword as there is no instance for this to refer to. The advantage of private static methods is that they can be reused later if you need to reinitialize the class variable.

QUESTION 7:

Consider the following piece of code.

```
public class Question{
    Question() {
        this();
    }

    public static void main(String []args) {
        Question obj = new Question();
        System.out.println("Java");
    }
}
```

Which of the following is the output of the above program?

- a. Java
- b. There will be a compile-time error.
- c. JavaJava.
- d. The program will give a runtime error.

Correct Answer: b

Detailed Solution:



NPTEL Online Certification Courses
Indian Institute of Technology Kharagpur

If a constructor calls itself, then the error message “recursive constructor invocation” occurs. The following program is not allowed by the compiler because, inside the constructor, we tried to call the same constructor. The compiler detects it instantly and throws an error.

QUESTION 8:

Consider the following program.

```
public class Question
{
    public static void main(String[] args) {
        String str = "Programming in java.";
        System.out.println(str.charAt(4)+str.substring(8, 11));
    }
}
```

What is the output of the above program?

- a. java
- b. ring
- c. r min
- d. gram

Correct Answer: b

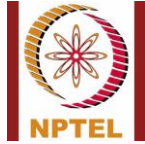
Detailed Solution:

Test by a run.

QUESTION 9:

Which of the following statement(s) is/are False?

- a. Hiding internal data from the outside world and accessing it only through publicly exposed methods is known as data encapsulation.
- b. Common behavior can be defined in a superclass and inherited into a subclass using the extends keyword.
- c. The term "class variable" is another name for a non-static field.



NPTEL Online Certification Courses
Indian Institute of Technology Kharagpur

- d. A local variable stores a temporary state; it is declared inside a method.

Correct Answer: c

Detailed Solution:

The term "class variable" is another name for a static field.

QUESTION 10:

Which of the following statement(s) is/are true?

- a. Static methods in interfaces are never inherited.
- b. You will get a compile-time error if you attempt to change an instance method in the superclass to a static method in the subclass.
- c. You can prevent a class from being subclassed by using the final keyword in the class's declaration.
- d. An abstract class can only be subclassed; it cannot be instantiated.

Correct Answer: a, b, c, d

Detailed Solution:

All options are correct.
