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Indian Institute of Technology Kharagpur

PROGRAMMING IN JAVA

Assignment 3

TYPE OF QUESTION: MCQ

Number of questions: 10 **Total mark: 10 × 1 = 10**

QUESTION 1:

In which of the following scenario(s), the static block is used in Java?

a. To create static variables.
b. To initialize instance variables.
c. To initialize static variables.
d. To create new objects.

Correct Answer: c

Detailed Solution:

The static keyword can be used to create a block to be used to initialize static variables.

This static block executes when classloader loads the class.

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QUESTION 2 :

Consider the following piece of code.

```
public class Question {
    private static int count = 0;

    public static void main(String[] args) {
        incrementCount();
        System.out.println("Count: " + count);
    }

    _________________ incrementCount() {
        count++;
    }
}
```

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

a. public void
b. private void
c. public static void
d. private static void

Correct Answer: c, d

Detailed Solution:

Option c and d are correct keyword(s).

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QUESTION 3:

Consider the following piece of code.

```
class A {
    public void display() {
        System.out.println("A's display method");
    }
}

class B extends A {
    public void display() {
        System.out.println("B's display method");
    }
}

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

What is the output of the above code?

a. A's display method
   B's display method
b. A's display method
   A's display method
c. B's display method
   B's display method
d. B's display method
   A's display method

Correct Answer: c

Detailed Solution:

Test by run.

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QUESTION 4:

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

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: d

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

QUESTION 5:

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

a. 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.
b. You can prevent a class from being subclassed by using the final keyword in the class's declaration.
c. An abstract class can be instantiated.
d. Common behaviour can be defined in a superclass and inherited into a subclass using the extends keyword.

Correct Answer: a, b, d

Detailed Solution:

An abstract class cannot be instantiated.

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QUESTION 6:

Consider the following program.

```
public class Question{
    public static void main(String[] args){
        String str = " programming in java ";
        System.out.println(str.substring(1,3)+str.substring(4,5)+
                           str.substring(6,8));
    }
}
```

What is the output of the above program?

a. prgam
b. program
c. gramm
d. ing in

Correct Answer: a

Detailed Solution:
Test by a run.

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QUESTION 7:

Consider the following piece of code.

```
class Question{
      static int a =10;
}

class Question1 extends Question{
      static int a =20;
}

public class Quest extends  Question1{
      public static void main(String args[]){
            a =100;
            System.out.println(Question.a);
            System.out.println(Question1.a);
      }
}
```

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

a. 10
100

b. 10
20

c. 100
10

d. 10
10

Correct Answer: a

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Detailed Solution:
Test by run.

QUESTION 8:

Consider the following program.

```
class Question {
          int a=400;
          int b=200;
}
public class Child1 extends Question {
           int a=1000;
            int b=2000;
void add(int a,int b) {
     System.out.println(a+this.b-super.a);
    }
public static void main(String[] args) {
        Child1 c = new Child1();
        c.add(100,300);
   }
}
```

If the program is executed, then what will be the output from the execution?

a. 1700
b. 1300
c. 0
d. 2600

Correct Answer: a

Detailed Solution:
a = 100 , this.b=2000, super.a=400 , 100+2000-400=1700

QUESTION 9:

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

a. Hiding internal data from the outside world and accessing it only through publicly exposed methods is known as data encapsulation.
b. Static methods in interfaces are never inherited.
c. The term "class variable" is another name for a non-static field.
d. A local variable stores a temporary state; it is declared inside a method.

Correct Answer: a, b, d

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

QUESTION 10:

All classes in java are inherited from which class?

a. java.lang.class
b. java.class.inherited
c. java.class.object
d. java.lang.Object

Correct Answer: d

Detailed Solution:

All classes in java are inherited from Object class.
