**QUESTION**
**Given:**

```
Integer i1 = 1000;
Integer i2 = 1000;
if(i1 != i2) System.out.println("different objects");
if(i1.equals(i2)) System.out.println("meaningfully equal");
```

**What is the output?**
A. Compilation error
B. different objects
C. meaningfully equal
D. different objects
meaningfully equal
E. None is print

**Correct Answer:** D

---

**QUESTION**
**Given:**

```
Integer i3 = 10;
Integer i4 = 10;
if(i3 == i4) System.out.println("same object");
if(i3.equals(i4)) System.out.println("meaningfully equal");
```

**What is the output?**

A. Compilation error
B. same object
C. meaningfully equal
D. same object
meaningfully equal
E. None is print

**Correct Answer:** D

---

**QUESTION**
**What output will be produced when the following code is executed?**

```
Integer my_Integer = new Integer(34);
long my_long = 34L;
if (my_Integer.equals(my_long))
System.out.println("equals() true");
if (my_Integer == my_long)
System.out.println("== true");
```

A. Compilation error
B. An exception is thrown
C. equals() true
D. == true
E. equals() true
== true
F. Nothing is show in the output

**Correct Answer:** D

---

**QUESTION**
**Consider the following program:**

```
class Increment {
        public static void main(String []args) {
                Integer i = 10;
                Integer j = 11;
                Integer k = ++i; // INCR
                System.out.println("k == j is " + (k == j));
                System.out.println("k.equals(j) is " + k.equals(j));
        }
}
```

**Which one of the following options correctly describes the behavior of this program?**

a) When executed, this program prints
k == j is false
k.equals(j) is false

b) When executed, this program prints
k == j is true
k.equals(j) is false

c) When executed, this program prints
k == j is false
k.equals(j) is true

d) When executed, this program prints
k == j is true
k.equals(j) is true
e) When compiled, the program will result in a compiler error in the line marked with the comment INCR.

**Correct Answer: D**

---

**QUESTION**
**Given:**

```
public class Spock {
        public static void main(String[] args) {
                Long tail = 2000L;
                Long distance = 1999L;
                Long story = 1000L;
                if ((tail > distance) ^ ((story * 2) == tail))
                System.out.print("1");
                if ((distance + 1 != tail) ^ ((story * 2) == distance))
                System.out.print("2");
        }
}
```

**What is the result?**

A. 1

B. 2

C. 12

D. Compilation fails

E. No output is produced

F. An exception is thrown at runtime

**Correct Answer: E**

---

**QUESTION**
**Given**:

```
class TKO {
        public static void main(String[] args) {
                String s = "-";
                Integer x = 343;
                long L343 = 343L;
                if(x.equals(L343)) s += ".e1 ";
                if(x.equals(343)) s += ".e2 ";
                Short s1 = (short)((new Short((short)343)) / (new Short((short)49)));
                if(s1 == 7) s += "=s ";
                if(s1 < new Integer(7+1)) s += "fly ";
                System.out.println(s);
        }
}
```

**Which of the following will be included in the output String s? (Choose all that apply.)**

A. .e1

B. .e2
C. =s
D. fly
E. None of the above
F. Compilation fails
G. An exception is thrown at runtime

**Correct Answer: B, C, D**

---

**QUESTION**
**Given:**

```
3. public class Theory {
4.       public static void main(String[] args) {
5.                String s1 = "abc";
6.                String s2 = s1;
7.                s1 += "d";
8.                System.out.println(s1 + " " + s2 + " " + (s1==s2));
9.
10.               StringBuffer sb1 = new StringBuffer("abc");
11.               StringBuffer sb2 = sb1;
12.               sb1.append("d");
13.               System.out.println(sb1 + " " + sb2 + " " + (sb1==sb2));
14.      }
15. }
```

**Which are true? (Choose all that apply.)**

A. Compilation fails
B. The first line of output is abc abc true
C. The first line of output is abc abc false
D. The first line of output is abcd abc false
E. The second line of output is abcd abc false
F. The second line of output is abcd abcd true
G. The second line of output is abcd abcd false

**Correct Answer: D, F**

---

**QUESTION**
**Given:**

```
class Polish {

        public static void main(String[] args) {
                int x = 4;
                StringBuffer sb = new StringBuffer("..fedcba");
```

```
                sb.delete(3,6);
                sb.insert(3, "az");
                if(sb.length() > 6) x = sb.indexOf("b");
                sb.delete((x-3), (x-2));
                System.out.println(sb);
        }
}
```

**What is the result?**

A .faza
B .fzba
C ..azba
D .fazba
E ..fezba
F Compilation fails
G An exception is thrown

**Correct Answer: C**

---

**QUESTION**
**Consider the following program:**

```
class ArrayCompare {
        public static void main(String []args) {
                int []arr1 = {1, 2, 3, 4, 5};
                int []arr2 = {1, 2, 3, 4, 5};
                System.out.println("arr1 == arr2 is " + (arr1 == arr2));
                System.out.println("arr1.equals(arr2) is " + arr1.equals(arr2));
                System.out.println("Arrays.equals(arr1, arr2) is " +
                java.util.Arrays.equals(arr1, arr2));
        }
}
```

**Which one of the following options provides the output of this program when executed?**

a) arr1 == arr2 is false
arr1.equals(arr2) is false
Arrays.equals(arr1, arr2) is true

b) arr1 == arr2 is true
arr1.equals(arr2) is false
Arrays.equals(arr1, arr2) is true

---

c) arr1 == arr2 is false
arr1.equals(arr2) is true
Arrays.equals(arr1, arr2) is true

d) arr1 == arr2 is true
arr1.equals(arr2) is true
Arrays.equals(arr1, arr2) is false

e) arr1 == arr2 is true
arr1.equals(arr2) is true
Arrays.equals(arr1, arr2) is true

**Correct Answer: A**

---

**QUESTION**
**Given classes defined in two different files:**

```
package util;
public class BitUtils {
        public static void process(byte[] b) { /* more code here */ }
}
1. package app;
2.
3. public class SomeApp {
4.      public static void main(String[] args) {
5.              byte[] bytes = new byte[256];
6.              // insert code here
7.      }
8. }
```

**What is required at line 6 in class SomeApp to use the process method of BitUtils?**
A. process(bytes);
B. BitUtils.process(bytes);
C. util.BitUtils.process(bytes);
D. SomeApp cannot use methods in BitUtils.
E. import util.BitUtils.*;
process(bytes);

**Correct Answer:** C

---

**QUESTION**
**Given these classes in different files:**

```
package xcom;
public class Useful {
        int increment(int x) {
                return ++x;
        }
}
import xcom.*; // line 1
class Needy3 {
        public static void main(String[] args) {
                xcom.Useful u = new xcom.Useful(); // line 2
                System.out.println(u.increment(5));
        }
}
```

**Which statements are true? (Choose all that apply)**
A. The output is 0.
B. The output is 5.
C. The output is 6.
D. Compilation fails.
E. The code compiles if line 1 is removed.
F. The code compiles if line 2 is changed to read
Useful u = new Useful();

**Correct Answer:** D

---

**QUESTION**
**Given two files:**

```
package xcom;
public class Stuff {
        public static final int MY_CONSTANT = 5;
        public static int doStuff(int x) {
                return (x++)*x;
        }
}
import xcom.Stuff.*;
import java.lang.System.out;
class User {
        public static void main(String[] args) {
                new User().go();
        }
```

```
        void go() {
                out.println(doStuff(MY_CONSTANT));
        }
}
```

**What is the result?**

A. 25
B. 30
C. 36
D. Compilation fails
E. An exception is thrown at runtime

**Correct Answer:** D

---

**QUESTION**
**Given classes defined in two different files:**

```
package util;
public class BitUtils {
        static void process(byte[] b) {}
}
01. package app;
02. public class SomeApp {
03.     public static void main(String[] args) {
04.             byte[] bytes = new byte[256];
05.             // insert code here
06.     }
07. }
```

**What is required at line 5 in class SomeApp to use the process method of BitUtils?**

A. process(bytes);
B. BitUtils.process(bytes);
C. app.BitUtils.process(bytes);
D. util.BitUtils.process(bytes);
E. import util.BitUtils.*;
process(bytes);
F. SomeApp cannot use the process method in BitUtils.

**Correct Answer:** F

---

**QUESTION**
**Given the SampleClass, what is the value of currentCount for the instance of object x after the code segment had been executed?**

```
SampleClass x = new SampleClass();
SampleClass y = new SampleClass();
x.increaseCount();


public class SampleClass {
        private static int currentCount = 0;
        public SampleClass() {
                currentCount++;
        }
        public void increaseCount() {
                currentCount++;
        }
}
```

A. 0
B. 1
C. 2
D. 3
E. Compiler error
F. Runtime error

**Correct Answer: D**

---

**QUESTION**
Given:

```
public class A{
  private int counter = 0;

  public static int getInstanceCount() {
    return counter;
  }

  public A() {
    counter++;
  }
}
```

**Given this code from Class B:**

```
25. A a1 = new A();
26. A a2 = new A();
```

```
27. A a3 = new A();
28. System.out.println(A.getInstanceCount());
```

**What is the result?**

A. Compilation of class A fails.
B. Line 28 prints the value 3 to System.out.
C. Line 28 prints the value 1 to System.out.
D. A runtime error occurs when line 25 executes.
E. Compilation fails because of an error on line 28.

**Correct Answer: A**

---

**QUESTION**
**Given the following code:**

```
public class Counter {

  public static int getCount(String[] arr) {
      int count = 0;
      for(String var : arr) {
          if (var!=null) count++;
      }
      return count;
   }

   public static void main(String[] args) {

      String[] arr = new String[4];
      arr[1] = "C";
      arr[2] = "";
     arr[3] = "Java";
      System.out.print(getCount(arr));

  }

}
```

**And the commands:**

```
javac Counter.java
java Counter
```

**What is the result?**

A. 2
B. 3
C. Compilation fails
D. An exception is thrown

**Correct Answer: B**

---

**QUESTION**
**Given:**

```
StringBuffer b = new StringBuffer("3");
System.out.print(5+4+b+2+1);
```

**What is the result?**

A. 54321
B. 9321
C. 5433
D. 933
E. Output is similar to: 9java.lang.StringBuffer@100490121
F. Compilation fails

**Correct Answer: F**

---

**QUESTION**
**What will the following class print when run?**

```
public class Sample {

   public static void main(String[] args) {

      String s1 = new String("java");
     StringBuilder s2 = new StringBuilder("java");
     replaceString(s1);
     replaceStringBuilder(s2);
     System.out.println(s1 + s2);
   }

   static void replaceString(String s) {
       s = s.replace('j', 'l');
    }

   static void replaceStringBuilder(StringBuilder s) {
        s.append("c");
   }
}
```

A. javajava
B. lavajava
C. javajavac
D. lavajavac

E. None of these
F. Compilation fails
G. An exception is thrown

**Correct Answer: C**

---

**QUESTION**
**Given the following code:**

```
public class Print01 {

  public static void main(String[] args) {

      double price = 24.99;
       int quantity = 2;
      String color = "Blue";
     //Insert code here. Line ***

  }

}
```

**Which tow statements, inserted independently at line ***, enable the program to produce the following output:**

We have 002 Blue pants that cost $24.99

A. System.out.printf("We have %03d %s pants that cost $%3.2f.\n",quantity, color, price);
B. System.out.printf("We have$03d$s pants that cost $$3.2f.\n",quantity, color, price);
C. String out = String.format ("We have %03d %s pants that cost $%3.2f.\n",quantity, color,price); System.out.println(out);
D. String out = System.out.format("We have %03d %s pants that cost $%3.2f. ",quantity, color,price); System.out.println(out);

**Correct Answer: A, C**

---