NPTEL Online Certification Courses

Indian Institute of Technology Kharagpur

PROGRAMMING IN JAVA

Assignment 5

TYPE OF QUESTION: MCQ

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

QUESTION 1:

Consider the following piece of code.

```
public class TryCatchFinally {
     public static void main(String []args) {
           try {
                 System.out.println("try");
                 System.exit(0);
           }
           catch(ArithmeticException e){
                 System.out.println("catch");
           }
           finally {
                 System.out.println("finally");
           }
     }
}
```

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

a. The output of the code is
   try
   catch
   finally
b. The output of the code is
   try
c. The output of the code is
   try
   finally
d. The output of the code is
   catch
   finally

Correct Answer: b

Detailed Solution:
`System.exit(0)` will execute in try block and the control will not go to other block and hence the output is only try.

QUESTION 2:

Which subclass of Throwable is checked at compile time?

a. NullPointerException
b. ArithmeticException
c. IOException
d. ArrayIndexOutOfBoundsException

Correct Answer: c

Detailed Solution:

Checked exceptions are also called compile-time exceptions, as they arise at compile time. Java code containing any checked exceptions won't compile. IOException is one of the most common checked exceptions in Java. It's caused by different input-output problems such as invalid file access or networking errors.

QUESTION 3:

The fields in an interface are implicitly specified as

a. public
b. protected
c. private
d. static and final

Correct Answer: d

Detailed Solution:
Fields in an interface are by default, static and final.

QUESTION 4:

All the classes related to handling exceptions are defined in which of the following Java packages?

a. java.awt
b. java.io
c. java.lang
d. java.util

Correct Answer: c

Detailed Solution:
The classes and all sub-classes related to handling exceptions are defined in `java.lang` package.

QUESTION 5:

Which of the following is TRUE about try-catch construct in Java?

I. A try-catch blocks must have a finally block.

II. A try block is limited to maximum two catch blocks.

III. Barring the Java Virtual Machine from exiting, the finally block will always be executed.

a. I and III

b. I only

c. III only

d. I and II

Correct Answer: c

Detailed Solution:
A finally block is optional. A try block can have multiple catch blocks. Further, finally block will not be executed if program encounters an exit statement in a block before the finally block.

QUESTION 6:

Which of the following is an incorrect statement?

a. All the methods in an interface are abstract and public implicitly.
b. An interface can be implemented by a class.
c. An interface can contain constructors.
d. An interface can be extended by another interface.

Correct Answer: c

Detailed Solution:
All interface methods are implicitly public and abstract. In other words, a programmer need not to explicitly type the public or abstract modifiers in the method declaration. Interface does not have constructor. Because interfaces do not have any instance variable. All the variables in an interface are static and final which are assigned during the declaration phase of the variable, and hence there is no need of constructor in an interface.

QUESTION 7:

Match each item in the first list with an item in the second list.

LIST1:

a. int[] b;
   b[0] = 0;
b. ArrayIndexOutOfBoundException

LIST2:

1. Compile-time exception
2. Compilation error
3. Run-time exception

a. a→2 b→1
b. a→2 b→3
c. a→1 b→2
d. a→3 b→3

Correct Answer: b

Detailed Solution:

List 1 (a) has a compile time error: variable b might not have been initialized **List 2 (b)** *ArrayIndexOutOfBoundException* is a runtime exception.

QUESTION 8:

Suppose A and B are two interfaces. Then which of the following statements is true?

a. `class D extends A, B { … }`
b. `class D extends A implements B { … }`
c. `class D implements A, B { … }`
d. `class D implements A extends B { … }`

Correct Answer: c

Detailed Solution:
Interfaces can only be implemented but not extended by a class.

QUESTION 9:

Consider the following program.

```
interface A {
      public abstract void run();
}

class B implements A {
      public void run() {
      }
}

class MyThread extends B {
      public void run() {
            for (int i=0;i<5 ; i++ ); {
                  System.out.println("NPTEL Java");
            }
      }
}
public class ThreadDemo  {
     public static void main(String[] args) {
          MyThread t = new MyThread();
          t.run();
      }
}
```

Which of the following statement(s) is/are NOT correct?

a. `interface A` is declared correctly.
b. The method in class B implements the run() method correctly.
c. MyThread class inherits the interface A and hence overrides the run() method in B.
d. The code will compile successfully and then print "NPTEL Java" 5 times.

Correct Answer: d

Detailed Solution:
Interface A has an abstract method and class B has empty implementation of run() method and then this method overrides in MyThread class.
As the for loop is terminated with ";" so only one time it will print "NPTEL Java".

QUESTION 10:

Consider the code given below.

```
public class B1{
  public static void main(String[] args) {
      try  {
            int a=100;
            System.out.println(a);
            int b=a/0;
            a=a+1;
            System.out.println(a);
      }
      catch(ArithmeticException e)  {
            System.out.println("Exception thrown: cannot divide by zero");
      }
  }
}
```

Which of the following will be printed if the program is executed?

a. 100
   Exception thrown: cannot divide by zero
b. 101
   Exception thrown: cannot divide by zero
c. 100
   101
d. 101
   100

Correct Answer: a

Detailed Solution:

Inside the try block, the statement `int b = a/0` causes the ArithmaeticException which will be caught in the next catch block.

**********END**********