PROGRAMMING IN JAVA

Assignment5

TYPE OF QUESTION: MCQ

Number of questions: 15 **Total mark: 15 × 1 = 15**

QUESTION 1:

Which of the following best describes the inheritance in Java?

a. A sub class can access all the methods in the base class.
b. A sub class can access alldata in the base class.
c. A sub class can access both data and methods in the base class.
d. A sub class not necessarily can access all data and all methods in the base class.

Correct Answer:d

Detailed Solution:
A sub class can inherit only the data and methods which are specified with public/ protected access specifier.

QUESTION 2:

If a class, say B inherits from a class, say A, then which one of the following statement is true?

a. A data but not method if it is declared in A cannot be declared in B.
b. A method but not data if it is declared in A cannot be declared in B.
c. Both data and method declared in A can be declared in B.
d. Nothing can be declared in B once declared in A.

Correct Answer:c

Detailed Solution:
Java inheritance supports method overriding, hence, method once defined in a base class can be redefined in a derived class. Further, java supports static scope rule, so a data with the same declaration is allowed both in base and derived class.

QUESTION 3:

Which of the following is true, for a derived class C when A and B are two interfaces?

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

Correct Answer:c

Detailed Solution:
In case of inheritance, `extends` is not applicable to interface.

QUESTION 4:

Which access type data gets derived as private member in derived class?

a. private
b. public
c. protected
d. default

Correct Answer:c

Detailed Solution:
A data/ method with protected becomes the private in the derived class.

QUESTION 5:

Suppose A and B are two classes. 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 { … }`
e. None of the above

Correct Answer: e

Detailed Solution:
A class cannot extends two classes (i.e., multiple inheritance is not possible with classes). Further, A class cannot come under “implements” specification.

QUESTION 6:

All interface methods are implicitly

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

Correct Answer:b

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.

QUESTION 7:

If a derived class object is created, which constructor is called first?

a. Base class constructor is called first and then the derived class constructor.
b. Derived class constructor is called first and then the base class constructor.
c. Only derived class constructor is called.
d. Only base class constructor is called.

Correct Answer:a

Detailed Solution:
The constructors are called in the order of level of inheritance, that is, if D inherits B, then B() is called first and then D().

QUESTION 8:

All variables defined in an interface should be

a. public
b. static
c. final
d. None of the above

Correct Answer: a, b, c

Detailed Solution:
All variables defined in an interface should be public, static and final. In other words, interfaces can declare only constants, no instance variables.

QUESTION 9:

All interface methods must not be?

a. public
b. static
c. final
d. abstract

Correct Answer: b, c

Detailed Solution:
An interface method must not be static. Also, it should not be final, as in the derived class it should be implemented.

QUESTION 10:

Which of the following is **not true** so far the inheritance is concerned?

a. An interface can inherit one or more class(s).
b. An interface cannot inherit another interface.
c. A class can inherit from multiple interfaces at the same level.
d. An interface can inherit from multiple interfaces at the same level.

Correct Answer: a, b

Detailed Solution: An interface can inherit another interface. A class can implement one and more than one interfaces.

QUESTION 11:

When does an exception occur?

a. During the time of compilation of a Java program.
b. During the time of execution of a Java program.
c. Anytime, that is, during compilation and execution of a program.
d. At the end of execution of a Java program, if there is an exception.

Correct Answer:b

Detailed Solution:
Exception occurs when there is a run time error, that is, during the time of execution.

QUESTION 12:

If there is a try block, then

a. there should be a catch block.
b. there may not be any catch block.
c. there should be a finally block.
d. there may be multiple catch blocks.

Correct Answer: d

Detailed Solution: A *try block* must be followed by *catch blocks* or *finally block or both*.

QUESTION 13:

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 try block should be accompanied with at least one catch block and there is no limit on catch block(s). The finally block is not mandatory in try-catch construct, and if there is a finally block, then it will execute always even if there is no run time error, that is, exception in a program.

QUESTION 14:

Which of the following is TRUE?

a. The multiple catch blocks should be listed in the order from general exception classes to more specialized ones.
b. If there is no exception, the finally block will not be executed.
c. If there are multiple catch blocks, only the first one matching the exception will be executed.
d. If there are multiple catch blocks, all blocks that match the exceptions will be executed.

Correct Answer: c

Detailed Solution: There can be multiple catch blocks, but only the one that first matches the exception type is executed.That means you need to order the catch blocks properly.

QUESTION 15:

What is the output of the following code?

```
          try {
              intnum = Integer.parseInt("Two thousand nineteen");
          } catch (NumberFormatException e) {
              System.out.println("You don't have a number.");
          } catch (Exception e) {
          System.out.println("Something went terribly wrong!"); }
finally {
              System.out.println("Program is in execution…");
}
```

(a)
```
You don't have a number.
Program is in execution…
```

(b)
```
Something went terribly wrong!
Program is in execution…
```

(c)
```
Program is in execution…
```

(d)
```
You don't have a number.
Something went terribly wrong!
Program is in execution…
```

Correct Answer: a

Detailed Solution:
There will be an error in the statement in the try { } block for which the exception object of type `NumberFormatException`will occur, which then be caught by the first catch {} block in the program.

QUESTION 16:

What is the output of this program?

```
classExceptionHandling        {
public static void main(String args[ ])   {
try  {
int a, b;
                b = 0;
                a = 5 / b;
System.out.print("A");
            } catch(ArithmeticException e)    {
     System.out.print("B");
            }
finally  {            {
     System.out.print("C");
            }
        }
}
  }
```

a. A
b. B
c. AC
d. BC

Correct Answer: d

Detailed Solution:
There will be a divide-by-zero error in the statement a = 5/b; and as a consequence it will throw an exception object of type `ArithmeticException`which will be caught by the catch { } block in the program. From the point of exception, the control will jump to the catch block and then to the finally { } block.

QUESTION 17:

The exception class is defined in which of the following Java package?

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

Correct Answer: c

Detailed Solution:

The exception class and all its sub-classes are defined in `java.lang`package .

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