



PROGRAMMING IN JAVA

Assignment1

TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Which of the following is true?

- a. Java uses only interpreter.
- b. Java uses only compiler.
- c. Java uses both interpreter and compiler.
- d. None of the above.

Correct Answer: c

Detailed Solution:

Creating a *.class* file from *.java* using *javac* command is a compilation task, whereas execution of a *.class* file using *java* or *appletviewer* command is the process of interpretation.

QUESTION 2:

A Java file with extension '*.class*' contains

- a. Java source code
- b. HTML tags
- c. Java Byte code
- d. A program file written in Java programming language

Correct Answer: c

Detailed Solution:

A *.class* file is a compiled version of the *.java* file in Byte code (it is a kind of object code with JVM (Java Virtual Machine) as the target machine).

QUESTION 3:

Which of the following features are **not** common in both Java and C++?

- a. The class declaration.
- b. The access modifiers.
- c. The encapsulation of data and methods.
- d. Multiple inheritance from class

Correct Answer: d

Detailed Solution:

C++ supports multiple inheritances whereas Java does not.

QUESTION 4:

What is the value returned by the method $f()$ defined below ?

```
public static int f(int x, int y){return (x>y) ? y : x;}
```

- a. The sum of x and y that is, $x + y$.
- b. The difference of x and y that is, $x - y$.
- c. The maximum of x and y that is, the larger value of x and y.
- d. The minimum of x and y that is, the smaller value of x and y.

Correct Answer: d

Detailed Solution:

It will return the minimum of x and y.

QUESTION 5:

A platform is the hardware or software environment in which a program runs. Which of the following is/are Java platform component(s)?

- a. HTML
- b. Java Virtual Machine
- c. Java Application Programming Interface (API)
- d. HotJava

Correct Answer: b,c

Detailed Solution:

A platform is the hardware or software environment in which a program runs. Some of the most popular platforms are Microsoft Windows, Linux, Solaris OS, and Mac OS. Most platforms can be described as a combination of the operating system and underlying hardware. The Java



platform differs from other platforms as it is a software-only platform that runs on top of other hardware-based platforms.

The Java platform has two components:

- a. The Java Virtual Machine
- b. The Java Application Programming Interface (API)

QUESTION 6:

Consider the following program.

```
public class Question1{
    public static void main(String args[]){
        for(int a=1;a<3;a+=3){
            System.out.print(--a);
        }
    }
}
```

What will be the output of the program if it is executed?

- a. 0
- b. 01
- c. 012
- d. 0123

Correct Answer: a

QUESTION 7:

Following is a piece of code where some parts of a statement is missing:

```
public class Question3{
    public static void main(String args[]){
        charnptel[]={ 'N', 'P', 'T', 'E', 'L' };
        System.out.print(_____);
    }
}
```

In the following, some options are given. You have to choose the correct option for the argument in `System.out.print()` function to print the first and the last characters in the array `npTEL`.

- a. `npTEL[npTEL.length-1] + npTEL[0]`
- b. `npTEL[0] + npTEL[npTEL.length-1]`
- c. `"" + npTEL[0] + npTEL[npTEL.length-1]`
- d. `"" + npTEL[npTEL.length-1] + npTEL[0]`

Correct Answer: c

QUESTION 8:

Which of the following **cannot** be used for a variable name in Java?

- a. identifier
- b. final
- c. malloc
- d. calloc

Correct Answer: b

Detailed Solution:

final is a reserved keyword in Java, which cannot be used for naming a variable or class.

QUESTION 9:

```
public class Operator3 {  
    public static void main(String[] args) {  
        String str1="NPTEL";  
        String str2="java";  
        System.out.println(str1+str2); //Statement 1  
        int a=20;  
        int b=10;  
        System.out.println(a+b);           //Statement 2  
    }  
}
```

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

- a. Except + (plus) operator all other operators are overloaded in java.
- b. The output of the Statement 1 is
NPTELjava
- c. The output of the Statement 2 is



1020

- d. The output of the Statement 2 is
30

Correct Answer: b, d

Detailed Solution:

+ (plus) operator is overloaded in java.

QUESTION 10:

Which of the following is an incorrect array declaration?

- a. `int[] a = new int[20];`
- b. `int [] a;`
- c. `int[][] a = new int[20];`
- d. `int[][] a = {{1, 2, 4}, {1, 2, 4}};`

Correct Answer: c

Detailed Solution:

In the left hand side, it is a declaration for two-dimensional array, whereas at the right side it uses *new* operator to allocate a memory for a one-dimensional array.



PROGRAMMING IN JAVA

Assignment2

TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Which of the following is an incorrect way of initializing a variable in Java?

- a. Different line declaration and initialization

```
int a,b;  
a=1;  
b=2;
```

- b. Single line declaration and initialization (One at a each line)

```
int a = 1;  
int b = 2;
```

- c. Single line declaration and initialization (One line multiple variable)

```
int a=1,b=2;
```

- d. Single line declaration and initialization (One line multiple variable)

```
int a, b = 1, 2;
```

Correct Answer: d

QUESTION 2:

Which of the following is an invalid method overloading?

- a. `static double add(int a, double b){return a*b;}`
`static double add(double a, int b){return a*b;}`
- b. `static int add(int a, int b){return a*b;}`
`static int add(int a, int b, int c){return a*b*c;}`
- c. `static int add(int a, int b){return a*b;}`
`static double add(int a, int b, double c){return a*b*c;}`
- d. `static int add(int a,int b){return a*b;}`
`static double add(int a,int b){return a*b;}`

Correct Answer: d

Detailed Solution:

In Java, method overloading is not possible by changing only the return type of the method. It is ambiguous because multiple methods having same parameter signature may execute together. So, changing the return type along with parameter signature will ensure unambiguous execution of the code.

QUESTION 3:

Which of the following is/are TRUE regarding the string array provided as a parameter to the main method in Java?

- a. It can be used to get command line arguments from the user.
- b. It is mandatory to name the string array as 'args'.
- c. Accessibility of the values provided as command line argument is restricted only to the main method.
- d. Only one command line argument input is allowed at a time.

Correct Answer: a

Detailed Solution:



In Java, the function of the string array provided in the main method is to get the command line arguments provided by the user during the execution of the program. This is just like any other string array and hence, its name can be set anything. Since, the command line values are passed to the main method, this can be used anywhere in the program. Users are allowed to put multiple command line arguments one after another using spaces in between.

QUESTION 4:

Which of the following can be used to take input from user during the execution of a program?

- a. Using the string array provided as a parameter to the main method.
- b. `getText()` method can be used to get user input from the command line.
- c. Scanner class can be used by passing the predefined object `System.in`
- d. Once the execution starts, there is no way to provide user input.

Correct Answer: c

Detailed Solution:

The easiest way to read input in a Java program during execution is by using the Scanner class in `java.util` package. It can be used for obtaining the input of the primitive types like `int`, `double`, etc. and strings. The argument values provided in the main method is only applicable when the execution starts but during execution no value can be passed in that argument.

QUESTION 5:

Which of the following is/are TRUE about `print()` and `println()` methods?

- a. `print()` prints in a single line only and multiple lines cannot be printed in any way.
- b. `println()` prints and then appends a line break.
- c. `println()` prints in a single line only and multiple lines cannot be printed.
- d. `print()` prints and then appends a line break.

Correct Answer: b

Detailed Solution:

Method `print()` can be used to print in a single line only but multiple lines can be printed using escape sequence `'\n'`. Similarly, `println()` prints in a single line only and multiple lines can be



printed using escape sequence '\n'. Method print() prints but does not append a line break. So, option (b) println() prints and then appends a line break is the only correct option.

QUESTION 6:

Which of the following is called when a method having the same name as that the name of the class where it is defined?

- a. abstract
- b. this
- c. constructor
- d. final

Correct Answer: c

Detailed Solution:

In a class, if more than one method having the same name but with different signature is used, then it is called a constructor.

QUESTION 7:

Which of the following is NOT true about a method in a class?

- a. A method can be defined recursively.
- b. A method can be defined without any statement in it.
- c. A constructor is a special kind of method, which can be defined recursively.
- d. A method can be defined with variable number of arguments passed into it.

Correct Answer: c

Detailed Solution:

A constructor cannot be defined recursively. Other statements are true.

QUESTION 8:

Following is a program given for this question.

```
Public class Question8{  
    Public static void main(String args[]){  
        char a ='2';  
        int b=8;  
        System.out.println(a+b);  
    }  
}
```

What will be the output of the above program?

- a. 10
- b. 58
- c. 82
- d. 106

Correct Answer: b

Detailed Solution:

The argument will take the + operator to concatenate the ASCII value of char variable and the integer variable like a string.

QUESTION 9:

What will happen during the execution of the following code for the command line input?

```
public class Question9{
    public static void main(String args[]){
        System.out.println(args[5]);
    }
}
```

Consider the following input on command line and select the options with the correct output(s).

Input:

- A: Indian Institute of Technology
- B: 1 2 3 4 5 6
- C: Indian Institute of Technology NPTEL
- D: 1 2 3 4 5

- a. A :ArrayIndexOutOfBoundsException
- b. B :6
- c. C : NPTEL
- d. D : 1 2 3 4 5

Correct Answer: a,b

Detailed Solution:

The args[5] will return the 6th item present in the args array. If no item is present at 5th index then ArrayIndexOutOfBoundsException occurs.

QUESTION 10:

Which of the following is a Class in Java?

- a. int
- b. String
- c. short
- d. double



Correct Answer: b

Detailed Solution:

Except String all other options are primitive datatypes in Java. String is a class.



PROGRAMMING IN JAVA

Assignment3

TYPE OF QUESTION: MCQ

Number of questions:10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Which of these is used by operating system to manage the Recursion in Java?

- a. Array
- b. Stack
- c. Queue
- d. Tree

Correct Answer:b

Detailed Solution:

A stack is internally used by the Java run time manager to execute a recursive method.

QUESTION 2:

Which inheritance in Java programming is not supported?

- a. Multiple inheritance using classes.
- b. Multiple inheritance using interfaces.
- c. Multilevel inheritance.
- d. Single inheritance.

Correct Answer: a

Detailed Solution:

Java does not support multiple inheritance of classes but it supports **multiple inheritance** for interfaces. Means, a class cannot inherit more than one class but it can inherit and implement multiple interfaces.



QUESTION 3:

How can a protected member be accessed?

- a. Accessible only within the class.
- b. Accessible only within package.
- c. Accessible within the package as well as outside the package but through inheritance only.
- d. Accessible to everywhere.

Correct Answer:c

Detailed Solution:

A protected member is accessible to any sub class of the class.

QUESTION 4:

For each description on the left, find the best matching modifier on the right. You may use a choice more than once or not at all.

- | | |
|-------------------------------------------------------------------------------------|----------------------|
| 1. Hides the instance variable from code in other files. | A. private |
| 2. Hides the method from code in other files. | B. public |
| 3. Hides the subclass from code in other files. | C. final |
| 4. Exposes the API method to code in other files. | D. static |
| 5. Prevents the value of the instance variable from being Changed once initialized. | E. none of the above |
| a. 1-A,2-A,3-C,4-D,5-E | |
| b. 1-A,2-A,3-A,4-B,5-C | |
| c. 1-C,2-B,3-A,4-A,5-D | |
| d. None of Above | |

Correct Answer: b

Detailed Solution:

This matching is as per the general rule of the access specifiers in Java.

QUESTION 5:

If there is an abstract method in a class, then which of the following is/are NOT true.

- a. The class should be declared abstract.
- b. No object of the class can be created.
- c. Any subclass of the class may or may not be abstract class.
- d. A final class can have abstract method(s) and an abstract class can be declared final.

Correct Answer: d

Detailed Solution:

If a class includes abstract methods, then the class should be declared abstract. No object can be created for an abstract class. Further, if a class is derived from an abstract class and abstract method in the base class is not defined, then the derived class is also an abstract class.

QUESTION 6:

Which of the following statement is true regarding the order of execution of constructors in an inheritance hierarchy?

- a. Base class constructor will be called followed by the derived class constructor.
- b. Derived class constructor will be called followed by the base class constructor.
- c. Only Base class constructor will be called.
- d. Only derived class constructor will be called.

Correct Answer: a

Detailed Solution:

On object creation of derived class, first base class constructor and then the derived class constructor will be called.

QUESTION 7:

```
public class B1 {  
    private static int i = 0;  
    private static int j = 0;  
  
    public static void main(String[] args) {  
        int i = 3;  
        int k = 4;  
  
        {  
            int j = 2;  
            System.out.println("i + j is "+i + j);  
        }  
  
        k = i + j;  
        System.out.println(k);  
        System.out.println(j);  
    }  
}
```

What is the output of the above program?

- a. i + j is 32
3
0
- b. i + j is 5
7
2
- c. i + j is 32
7
2
- d. i + j is 5
3
0

Correct Answer: a

QUESTION 8:

Which of this keyword can be used in a sub class to call the constructor of super class?

- a. super
- b. this
- c. extent
- d. extends

Correct Answer: a

Detailed Solution:

Using the super keyword, we can explicitly call a base class constructor.

QUESTION 9:

Consider the composition of two classes as given below.

```
Public class Question5{
    public static void main(String args[]){
        String question= "Which course have you opted?";
        System.out.print(Answer.submit(question));
    }
}
class Answer{
    static String answer = "Programming with Java";
    static String submit(String question){
        return ("The answer to the question, "+question+" is "+answer);
    }
}
```

Which of the following option is true about the above program?

- a. Error: *String cannot be a method return type like void, int, char, etc.; as it is a class.*
- b. Error: *Non-static variable 'answer' cannot be referenced from a static context.*
- c. Output: The answer to the question, Which course have you opted? is Programming with Java
- d. Error: *Compilation error as variable 'question' is not static.*

Correct Answer: c

QUESTION 10:

Consider the class composition as shown in the following.

```
public class Student{
    public static void main(String[] args){
        Question12 question =new Question12();
        System.out.print(question.q);
    }
}

class Question12{
    final String q = "Questions ";
    private String a = "Answers";
}
```

Select the correct option(s) as per your understanding of the above-mentioned code.

- a. This code doesn't maintain encapsulation.
- b. This code maintains encapsulation.
- c. Variable 'q' can be modified using the 'question' object in Student class.
- d. Variable 'a' can be accessed using the 'question' object in Student class.

Correct Answer: b

Detailed Solution:

The code is an encapsulation.



PROGRAMMING IN JAVA

Assignment4

TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Which of the following is/are NOT correct regarding packages in Java?

- a. Java supports both pre-defined and user-defined packages.
- b. Packages are used to organize a set of related classes and interfaces.
- c. Pre-defined packages help to develop programs easily by providing thousands of classes.
- d. Packages are used to organize only a set of related classes and not interfaces.

Correct Answer: d

Detailed Solution:

A package is a namespace that organizes a set of related classes and interfaces. It is just like a folder in your computer, where, you might keep HTML pages in one folder, images in another, and scripts or applications in yet another. Since, Java programs can be composed of hundreds or thousands of individual classes, it makes sense to keep things organized by placing related classes and interfaces into packages.

QUESTION 2:

Which of the following access specifier(s) should you choose if you need access restricted to only subclass in the same package or different package?

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

Correct Answer: c

Detailed Solution:

In Java, same package subclass is accessible with default, protected and public access specifiers. And, subclass of different package is accessible by protected and public access specifiers. So, in this case we should choose protected only, as with public access specifier even non-subclass of different package will also get access, which is not acceptable.

QUESTION 3:

What is the significance of the ‘*’ in the following line, where “package” denotes a name of a package?

```
import package.*;
```

Select the correct statement in the following.

- a. Only the classes of this package will be imported.
- b. Only the interfaces of this package will be imported.
- c. All the classes and interfaces of this package will be imported.
- d. All the classes, interfaces and sub-packages of this package will be imported.

Correct Answer: c

Detailed Solution:

The significance of ‘*’ in an import statement in Java is that all the classes and interfaces of this package will be imported but not the sub-packages.

QUESTION 4:

Which of the following statement(s) is (are) CORRECT regarding an interface in Java?

- a. An interface can contain only abstract methods and standard methods but no static methods are allowed.
- b. Method bodies in an interface doesn’t exist for default methods and abstract methods.
- c. An interfaces cannot be instantiated but can be implemented by classes.
- d. An interfaces cannot be instantiated but can be extended by other interfaces.

Correct Answer: c, d

Detailed Solution:

In the Java programming language, an interface is a reference type, similar to a class, which can contain only constants, method signatures, default methods, static methods, and nested types. Method bodies exist only for default methods and static methods. Interfaces cannot be instantiated—they can only be implemented by classes or extended by other interfaces.

QUESTION 5:

How Java Runtime Environment (JRE) knows where to look for a package that you create?

- a. It searches in the current directory.
- b. It searches in the location set in the CLASSPATH environment variable.
- c. A user can set the path during runtime using the `-classpath` option.
- d. Using the `-path` option, a user can set the path.

Correct Answer: a, b, c

Detailed Solution:

- First, by default, the Java run-time system uses the current working directory as its starting point. Thus, if your package is in a sub-directory of the current directory, it will be found.
- Second, you can specify a directory path or paths by setting the CLASSPATH environmental variable.
- Third, you can use the `-classpath` option with **java** and **javac** to specify the path to your classes.

QUESTION 6:

Which of the following is the correct way of importing an entire package 'pkg'?

- a. `import pkg;`
- b. `import pkg.;`
- c. `import pkg.*;`
- d. `Import pkg.*;`

Correct Answer: c

Detailed Solution:



The * operator is used to get all the contents of a package at once. Also, the correct syntax to perform the operation is `import pkg.*;`

QUESTION 7:

Which of the following package(s) stores all the standard java classes?

- a. lang
- b. java
- c. util
- d. java.packages

Correct Answer: b

Detailed Solution:

The java package stores all the standard java classes.

QUESTION 8:

Consider the program given below.

```
Package com.nptel.iitkgp.course;  
package com.nptel.online.java;  
  
public class Test{  
public static void main(String[] args){  
if(1){  
System.out.println("NPTEL");  
}  
    else{  
System.out.println("Welcome");  
}  
}  
}
```

What will be the output if the above program is executed?

- a. It will give compile-time error
- b. It will give run-time error
- c. It will produce output
NPTEL
- d. It will produce output
Welcome

Correct Answer: a

Detailed Solution:

In if statement, as a condition, it will take only boolean expression or boolean value.

QUESTION 9:

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

- a. The default package in the Java language is java.lang.
- b. String is a final class and it is present in java.lang package.
- c. FileWriter is a class present in java.util package.
- d. Thread is a class present in java.lang package.

Correct Answer: c



Detailed Solution:

FileWriter is defined in java.io package.

QUESTION 10:

Which of the following interfaces is/are NOT a member of java.io package?

- a. DataInput
- b. ObjectInput
- c. Runnable
- d. FileFilter

Correct Answer: c

Detailed Solution:

Runnable is defined in java.lang package, and the other interfaces are defined in java.io package.

*****END*****



PROGRAMMING IN JAVA

Assignment5

TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Which one is correct declaration for implementing two interfaces?

- a. class C implements A, B { }
- b. class C implements A, implements B { }
- c. class C implements A extends B { }
- d. class C extend A, B { }

Correct Answer: a

Detailed Solution:

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

QUESTION 2:

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 3:

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 4:

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 5:

Does a subclass inherit both member variables and methods?

- a. No—only member variables are inherited.
- b. No—only methods are inherited.
- c. Yes—both are inherited - but not those are declared as private.
- d. Yes—only the members/ methods with protected are inherited.

Correct Answer: c

QUESTION 6:

Consider the following program.

```
public class Question4{
    public static void main(String args[]){
        int arr[]={0,1,2,3,4};
        int index=0;
        while(arr[index]==index){
            System.out.print(arr[index]);
            index++;
        }
    }
}
```

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

- a. 01234
- b. 01234 with `ArrayIndexOutOfBoundsException`
- c. `ArrayIndexOutOfBoundsException`
- d. Compilation error

Correct Answer: b

QUESTION 7:

Which of the following is a class?

- a. `DriverManager`
- b. `Connection`
- c. `Statement`
- d. `ResultSet`

Correct Answer: a

Detailed Solution:

Except for `DriverManager`, every other options are interfaces.

QUESTION 8:

Consider the program given below.

```
public class Question8{
    static public void method1(){
        System.out.println("This");
    }
    public static void method2(){
        System.out.println("is");
    }
    static public int method3(){
        System.out.println("Java");
        return 0;
    }
    public static void main(String args[]){
        try{
            method1();
        }catch(Exception e){
            System.out.println("1:"+e);
        }
        try{
            method2();
        }catch(Exception e){
            System.out.println("2:"+e);
        }
        try{
            method3();
        }catch(Exception e){
            System.out.println("3:"+e);
        }
    }
}
```

What will be the output of the following code?

- a. This
is
Java
- b. Exception at method 1
- c. Exception at method 2
- d. Exception at method 3

Correct Answer: a

QUESTION 9:

Consider the following code segment.

```
class Refer{
    static int a = 1;
}

class Answer extends Refer{
    static int a = 2;
}

public class Question9 extends Answer{
    public static void main(String args[]){
        a = 5;
        System.out.println(Answer.a);
        System.out.println(Reference.a);
    }
}
```

What will be the output of the following code?

- a. 1
1
- b. 1
2
- c. 5
1
- d. 5
5

Correct Answer: c

QUESTION 10:

Consider the following piece of program.

```
class Parent {  
    int a=40;  
    int b=20;  
}  
  
public class Child1 extends Parent {  
    int a=100;  
    int b=200;  
  
    void add(inta,int b) {  
        //body  
    }  
  
    public static void main(String[] args) {  
        Child1 c = new Child1();  
        c.add(1000,2000);  
    }  
}
```

Which of the following statements(s) is/are replaced in body of the function definition of **void add(inta,int b)** to get the output 60?

- a. System.out.println(this.a+b);
- b. System.out.println(this.a+this.b)
- c. System.out.println(super.a+super.b);
- d. System.out.println(a+b);

Correct Answer: c

Detailed Solution:

super.a=40 and super.b=20, so addition is 60.

*****END*****



PROGRAMMING IN JAVA

Assignment6

TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Which of the following is NOT a method of the Thread class in Java?

- a. `isAlive()`
- b. `getPriority()`
- c. `getNames()`
- d. `sleep()`

Correct Answer: c

Detailed Solution:

`getName()` is a method in the pre-defined Java class Thread but not `getNames()`. Other methods like `isAlive()`, `getPriority()` and `sleep()` are defined in the Thread class.

QUESTION 2:

Which of the following method can be used to know the priority of a thread?

- a. `getPriority()`
- b. `priority()`
- c. `isRunning()`
- d. `getThreadPriority()`

Correct Answer: a

Detailed Solution:

`getPriority()` is the method, which is used to know the priority given to a thread.

QUESTION 3:

Which of the following can be used to create an instance of Thread?

- a. By implementing the `Runnable` interface.
- b. By extending the `Thread` class.
- c. By creating a new class named `Thread` and calling method `run()`.
- d. By importing the `Thread` class from package.

Correct Answer: a, b

Detailed Solution:

An application that creates an instance of `Thread` must provide the code that will run in that thread. There are two ways to do this:

- *Provide a `Runnable` object.* The `Runnable` interface defines a single method, `run`, meant to contain the code executed in the thread. The `Runnable` object is passed to the `Thread` constructor
- *Subclass `Thread`.* The `Thread` class itself implements `Runnable`, though its `run` method does nothing. An application can subclass `Thread`, providing its own implementation of `run`

Reference:<https://docs.oracle.com/javase/tutorial/essential/concurrency/runthread.html>

QUESTION 4:

Which of these keywords must be used to monitor for exceptions?

- a. `try`
- b. `finally`
- c. `throw`
- d. `catch`

Correct Answer: a

Detailed Solution:

A `try` block must be included in a Java program to make the program robust by handling exceptions properly.

QUESTION 5:

Which one of these keywords must be used to handle the exception thrown by try block in some rational manner?

- a. try
- b. finally
- c. throw
- d. catch

Correct Answer: d

Detailed Solution:

The catch block is responsible for handling the exceptions raised by try block.

QUESTION 6:

Which of the following will contain the body of the thread?

- a. `run()`;
- b. `start()`;
- c. `stop()`;
- d. `main()`;

Correct Answer: a

Detailed Solution:

The `run()` method of a thread is same as the `main()` method for an application. Starting the thread causes the object's run method to be called.

QUESTION 7:

The following is a simple program using the concept of thread.

```
public class Question7 extends Thread{
    public void run(){
        System.out.println("Thread started ...");
    }
    public static void main(String args[]){
        Question7 t1= new Question7();
        t1.start();
    }
}
```

How many threads will be there when the above program is in execution?

- a. 0
- b. 1
- c. 2
- d. 3

Correct Answer: c

Detailed Solution:

The main thread and t1 thread altogether count to 2 threads.

QUESTION 8:

For the program given below, what will be the output after its execution?

```
public class Question8{  
    public static void main(String[] args){  
        Thread thread=Thread.currentThread();  
        System.out.println(thread.isAlive());  
    }  
}
```

- a. 0
- b. true
- c. 1
- d. false

Correct Answer: b

Detailed Solution:

isAlive() returns a boolean value depending on whether a thread is alive or not.

QUESTION 9:

Which of the following is a correct constructor for a thread object?

- a. Thread(Runnable a, String str);
- b. Thread(Runnable a, int priority);
- c. Thread(Runnable a, ThreadGroup t);
- d. Thread(int priority);

Correct Answer: a

Detailed Solution:

Thread(Runnable a, String str) creates a new Thread object. The others are not valid constructors to create a thread object.

QUESTION 10:

Which of these keyword(s) is used to manually throw an exception?

- a. try
- b. finally
- c. throw
- d. catch

Correct Answer: c

Detailed Solution:

The throw keyword is used to manually throw an exception.

*****END*****



PROGRAMMING IN JAVA

Assignment7

TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Which of the following streams contains the classes which can work on character stream?

- a. InputStream
- b. OutputStream
- c. FileReader
- d. FileWriter

Correct Answer: c, d

Detailed Solution:

Note: InputStream and OutputStream classes work on byte streams.

QUESTION 2:

Which of the following methods help in clearing the contents of the buffer:

- a. flush()
- b. clear()
- c. close()
- d. exit()

Correct Answer: a

Detailed Solution:

Note: Clear() and exit() are not any valid methods defined in any class in java.io package. The close() method closed a stream.



QUESTION 3:

In which Java APIs the classes for handling all IO-streams are defined?

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

Correct Answer: b

Detailed Solution:

java.io package is meant for handling io-streams in Java program.

QUESTION 4:

Which of the following statements is/ are NOT true?

- a. While you are creating an instance of File class, and if you do not use the file naming according to the convention of the local machine, the constructor will throw an exception of class `IOException`.
- b. A File object can be opened for both reading and writing simultaneously.
- c. When you create an object of Fileclass for writing, if the corresponding file does not exist on the local file system, then it will be created.
- d. Closing operation of a File object never faces any run-time error and hence need not to be placed under try-catch block.

Correct Answer: b

Detailed Solution:

You can open a File object either in read or write mode, but not both.



QUESTION 5:

Should FileReader be used to read a Java bytecode (e.g, a .class) file? Which of the following is an appropriate answer?

- a. No, bytecode files can only be executed, never read.
- b. No, the bytes in bytecode files are not intended to be interpreted as characters.
- c. Yes, any file can be read with FileReader under byte-stream class.
- d. Maybe, as long as the bytcodes were created on the same computer as the program usingFileReader.

Correct Answer: c

Detailed Solution:

Once can open a .class file and read its content using byte-stream class. However, the similar attempt with the FileReader class character stream is useless.

QUESTION 6:

Which of the following statement is NOT true for RandomAccessFile object?

- a. It can allow to open a file both in read and write mode.
- b. It can allow to store the data fields of any object and then reading the same.
- c. The seek(0) method of the object place the file pointer at the beginning of the file.
- d. It cannot be used to read a network line.

Correct Answer: d

Detailed Solution:

The RandomAccessFile is related to secondary storage only.

QUESTION 7:

Which of the following methods is/are must and to be override?

- a. `init()`
- b. `start()`
- c. `stop()`
- d. `paint()`

Correct Answer:d

Detailed Solution:

The `init()` and `paint()` methods are to be defined, as these two methods are abstract methods in the class `Applet`. The `start()` method cannot be overridden as it is `final`. However, an applet program can be executed successfully without any one of the applet method in it. In this case, it will draw a blank applet.

QUESTION 8:

Which of the following interface isNOT a member of `java.io` package?

- a. `DataInput`
- b. `ObjectInput`
- c. `Runnable`
- d. `FileFilter`

Correct Answer: c

Detailed Solution:

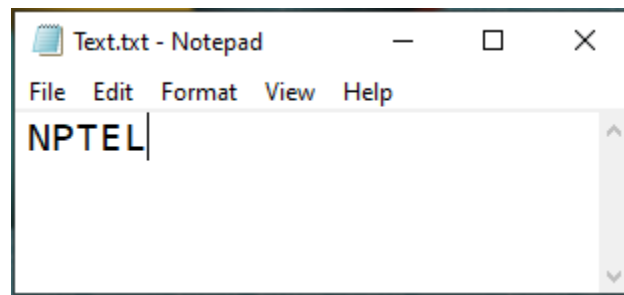
`Runnable` is defined in `java.lang` package, and the other interfaces are defined in `java.io` package.

QUESTION 9:

```
import java.io.*;

public class Question7{
public static void main(String[]args){
    try{
        InputStream file =new FileInputStream("./Text.txt");
        System.out.print(file.available());
    }
    catch(Exception e){
        System.out.print(e);
    }
}
```

The file **./Text.txt** when opened with the Notepad text editor, it shows the content as shown below.



Which of the following is the correct output for the 'try' portion of the code?

- a. Prints the number of bytes in the file.
- b. Prints the number of characters in the file.
- c. Prints 'true', if the file is present; else prints 'false'.
- d. Prints nothing, as an exception will be caught.

Correct Answer: a

Detailed Solution: Returns an estimate of the number of remaining bytes that can be read (or skipped over) from this input stream without blocking by the next invocation of a method for this input stream. The next invocation might be the same thread or another thread. A single read or skip of this many bytes will not block, but may read or skip fewer bytes.



QUESTION 10:

Which of the following methods help in clearing the contents of the buffer:

- a. flush()
- b. clear()
- c. close()
- d. exit()

Correct Answer: a

Detailed Solution:

Note: Clear() and exit() are not any valid methods defined in any class in java.io package. The close() method closed a stream.



PROGRAMMING IN JAVA

Assignment 8

TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

In Java AWT, TextArea and TextField are the subclass of

- a. List
- b. Label
- c. TextComponent
- d. TextBox

Correct Answer: c

Detailed Solution:

TextArea and TextField are the two sub classes of TextComponent in Java AWT.

.

QUESTION 2:

The class at the top of the AWT hierarchy is

- a. Component
- b. Window
- c. Container
- d. Frame

Correct Answer: a

Detailed Solution:

Others are the sub classes of the Component class.

QUESTION 3:

Which of the following packages provides many methods for graphics programming?

- a. java.awt
- b. java.Applet



- c. java.Graphics
- d. java.io

Correct Answer: a

Detailed Solution:

There is no package like java.Graphics and java.Applet. The Graphics class and other classes, which are necessary for GUI programming is defined in java.awt package.

QUESTION 4:

When we invoke `repaint()` for a `java.awt.Component` object, the AWT invokes which of the following method ?

- a. draw()
- b. show()
- c. update()
- d. paint()

Correct Answer: c

Detailed Solution:

The `repaint()` method calls automatically `update()` method and in turn `update()` method calls `paint()` method.

QUESTION 5:

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

- a. AWT components are platform-independent.
- b. AWT follows the MVC (Model View Controller).
- c. Swing components are platform-dependent.
- d. Swing follows MVC (Model View Controller).

Correct Answer: d

Detailed Solution:

AWT components are platform dependent and not follow MVC. Swing components follow MVC and are platform independent.



QUESTION 6:

What is the name of the method used to get the timestamp of an event in AWT ActionEvent Class ?

- a. getWhen().
- b. getModifiers().
- c. paramString().
- d. getActionCommand().

Correct Answer: a

Detailed Solution:

getWhen() method of ActionEvent class returns the timestamp of the event when it is occurred.

QUESTION 7:

Give the abbreviation of AWT?

- a. Applet Windowing Toolkit
- b. Abstract Window Toolkit
- c. Absolute Windowing Toolkit
- d. None of the above

Correct Answer: b

QUESTION 8:

Which of the following methods is called only once during the run time of an applet?

- a. stop()
- b. paint()
- c. init()
- d. destroy()

Correct Answer: c

Detailed Solution:

The init() is used to initialize an applet. Hence, it is called only once.



QUESTION 9:

Which of the following methods can be used to change the size of a `java.awt.Component` object?

- (A) `dimension()`
- (B) `setSize()`
- (C) `area()`
- (D) `size()`
- (E) `resize()`

- a. (A), (B), (C) & (E)
- b. (D) & (E)
- c. (A), (B) & (E)
- d. (B) & (E)

Correct Answer: d

Detailed Solution:

The two methods, namely `setSize()` and `resize()` can be used to change the size of a component.

QUESTION 10:

The **APPLET** tag is used to start an applet from both an HTML document and from an applet viewer.

- a. True
- b. False
- c. APPLET tag is not mandatory in both cases
- d. None of the above

Correct Answer: a

Detailed Solution:

The **APPLET** tag needs to be used to start an applet from both an HTML document and from an applet viewer.



OBJECT ORIENTED PROGRAMMING WITH JAVA

Assignment 9

TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Which layout manager places components in one of five regions: north, south, east, west, and center?

- a. CardLayout
- b. GridLayout
- c. BorderLayout
- d. FlowLayout

Correct Answer: c

Detailed Solution:

This is the layout that the BorderLayout does.

QUESTION 2:

Which of the following steps are must for any kind of event handling?

- a. Implement the listener method(s) to receive and process event related notifications
- b. Adding mouse listener in the init() method.
- c. Register the source(s) to receive notifications about specific type of event(s).
- d. Adding mouse motion listener in the main() method .

Correct Answer: a, c

Detailed Solution:

There are two basic steps so far the event handling is concerned: 1) Register all the sources of events and 2) implement the listener methods related to the event(s). The (b) and (d) are related to dealing with handling mouse event.

QUESTION 3:



Which of the following package supports event handling routine, when we use Swing components in GUI programs?

- a. Javax.swing
- b. Java.awt
- c. Java.util
- d. Java.applet

Correct Answer: b

Detailed Solution:

To support GUI programming, Java provides two packages: java.awt and javax.swing. Whatever be the GUI components, event handling classes are defined in java.awt.

QUESTION 4:

Which of the following displays components row-by-row in the order in which they were added to the JFrame?

- a. CardLayout
- b. FlowLayout
- c. BorderLayout
- d. GridLayout

Correct Answer: b

Detailed Solution:

Flow layout adds the components serially in the order in which they were added.

QUESTION 5:

Using a FlowLayout manager, which is the correct way to add elements to a container?

- a. add (component);
- b. add("Center", component);
- c. add(x, y, component);
- d. set(component);

Correct Answer: a

Detailed Solution:

add() - Other options are not valid in the context of FlowLayout manager.



QUESTION 6:

Which of the following class is used to create a pop-up list of items from which the user may choose?

- a. JList
- b. JComboBox
- c. JLabel
- d. JCheckBox

Correct Answer: b

Detailed Solution:

The JComboBox component creates a pop-up list.

QUESTION 7:

How many frames will be displayed according to the following program?

```
import javax.swing.*;
public class Test{
    public static void main(String[] args){
        JFrame f1 = new JFrame("My Frame");
        JFrame f2 = f1;
        JFrame f3 = f2;
        f1.setVisible(true);
        f2.setVisible(true);
        f3.setVisible(true);
    }
}
```

- a. 0
- b. 1
- c. 2
- d. 3

Correct Answer: b

Detailed Solution:

Although there are three frames declared, eventually they refer to only one frame.



QUESTION 8:

Which of the following method is used to set a frame, say `f` with size 300×200 pixels?

```
JFrame f = new JFrame();
```

- a. `f.setSize(300, 200);`
- b. `f.setSize(200, 300);`
- c. `f.paint(300, 200);`
- d. `f.setVisible(300, 200);`

Correct Answer: a

Detailed Solution:

The `setSize(300,200)` method is used to do the job. Other are either syntactically not valid or not appropriate.

QUESTION 9:

Which of the following classes can be used to represent a checkbox with a textual label that can appear in a menu?

- a. `MenuBar`
- b. `MenuItem`
- c. `CheckboxMenuItem`
- d. `Menu`

Correct Answer: c

Detailed Solution:

The component `CheckboxMenuItem` is with a textual label that can appear in a menu.

QUESTION 10:

What is(are) the way(s) to create a Frame using Java Swing?

- a. By creating the object of `Frame` class (*association*)
- b. By extending `Frame` class (*inheritance*)
- c. By importing a package named `JFrame`
- d. By declaring a class with name `JFrame`

Correct Answer: a, b



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Detailed Solution:

We can create a frame component by creating the object of Frame class (*association*) and by extending Frame class (*inheritance*).

*****END*****



PROGRAMMING IN JAVA

Assignment 10

TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Which of the following package contains classes and interfaces for networking?

- a. java.io
- b. java.util
- c. java.net
- d. javax.swing

Correct Answer: c

Detailed Solution:

The java.net packages includes many classes and interfaces for network programming in Java.

QUESTION 2:

In the following, which are the protocol follows connection less service?

- a. TCP
- b. TCP/IP
- c. UDP
- d. HTTP

Correct Answer: c

Detailed Solution:

TCP is connection-oriented, IP and UDP are connection-less, TCP/IP is thus connection-less protocol. HTTP is a stateless and not actually connection less. In other words, (a)-(c) are transport layer protocols, whereas HTTP is an application layer protocol.

QUESTION 3:

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



- a. TCP is a reliable but slow.
- b. UDP is not reliable but fast.
- c. File Transfer Protocol (FTP) is a standard Internet protocol for transmitting files between computers on the Internet over TCP/IP connections.
- d. In HTTP, all communication between two computers are encrypted.

Correct Answer: d

Detailed Solution:

HTTPS is the secure version of HTTP, where all communications between two computers are encrypted. The secure communication is not true in case with HTTP.

QUESTION 4:

In the socket programming, for an IP address, which can be used to find the host name and IP address of a client/ server?

- a. The ServerSocket class
- b. The Socket class
- c. The InetAddress class
- d. The Connection interface

Correct Answer: c

Detailed Solution:

An object of the InetAddress class is used to obtain the IP address and the host name of a client/ server computer connected in a network.

QUESTION 5:

Which of the following statement(s) is(are) TRUE?

- a. With stream sockets, there is no need to establish any connection and data flows between the processes as continuous streams.
- b. Stream sockets are said to provide a connection-less service and it follows UDP protocol.
- c. Datagram sockets are said to provide a connection-oriented service and it follows TCP protocol.
- d. With datagram sockets there is no need to establish any connection and data flows between the processes as packets.

Correct Answer: d



Detailed Solution:

So far the stream sockets are concerned 1) a process establishes a connection to another process, 2) data flows between the processes are continuous streams, 3) provides a connection-oriented service and 4) TCP is used. On the other hand, with datagram sockets, with datagram sockets 1) individual packets of information are transmitted, 2) the transmission of packets follows a connection less service and 3) the UDP protocol is used.

QUESTION 6:

The Swing Component classes that are used in Encapsulates a mutually exclusive set of buttons?

- a. AbstractButton
- b. ButtonGroup
- c. JButton
- d. ImageIcon

Correct Answer: b

QUESTION 7:

Which of the following way is used to create a frame by creating the object of Frame class?

- a. inheritance
- b. association
- c. Both A & B
- d. None of the above

Correct Answer: b

Detailed Solution:

The way that is used to create a frame by creating the object of Frame class is by association.

QUESTION 8:

Once a JDBC driver has been registered, which of the following method is used to make a database connection?

- a. getConnection(String url, String userID, String password)
- b. setConnection(String url, String userID, String password)



- c. Connect(String url, String userID, String password)
- d. Any one of the above.

Correct Answer: a

Detailed Solution:

The `getConnection(String url, String userID, String password)` method is used to make the database connection.

QUESTION 9:

Which of the following best describes about JDBC?

- a. JDBC works like a bridge connecting a Java application to a RDBMS, execute SQL commands and return results to the application.
- b. JDBC is a software component, which is both network and database independent.
- c. JDBC should be installed in the same machine from where the Java application will run.
- d. JDBC should be installed in the same server that of the database.

Correct Answer: a

Detailed Solution:

The JDBC driver for different databases is different. But, as an end-user, we don't have to bother about their implementation. The networking is also not an issue for the users. Further, JDBC can be installed anywhere in between the client and server.

QUESTION 10:

Which of these is a protocol for breaking and sending packets to an address across a network?

- a. TCP/IP
- b. DNS
- c. Socket
- d. Proxy Server

Correct Answer: a

Detailed Solution:



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TCP/IP is the protocol that breaks the packets and sends them in a network channel.

*****END*****



OBJECT ORIENTED PROGRAMMING WITH JAVA

Assignment 11

TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Which of the following statement is TRUE?

- a. SQL is a database management system based on relational algebra.
- b. SQL is a programming language like C, C++ and Java.
- c. SQL is case-sensitive.
- d. SQL is used in Java programs with JDBC to process data in DBMS.

Correct Answer: d

Detailed Solution:

SQL is not a DBMS like MySQL. It is a command processing using 4GL unlike all programming languages, which are 3GL and SQL is not-case-sensitive.

QUESTION 2:

The package, which is required to be imported for the JDBC programming?

- a. java.net
- b. java.sql
- c. java.lang
- d. java.io

Correct Answer: b

Detailed Solution:

All classes and interfaces related to JDBC are defined in java.sql package.



QUESTION 3:

Which of the following SQL command(s) is/are used for entering a new record into a table, say TEST?

- a. SELECT
- b. CREATE
- c. INSERT
- d. UPDATE

Correct Answer: c

Detailed Solution:

The INSERT INTO command is used to insert a record in to a table provided that a table already exists. If the table contains record, then the current record will be added at the end of the table.

QUESTION 4:

Which JDBC driver is efficient and always preferable for using JDBC applications?

- a. Type – 1
- b. Type – 2
- c. Type – 3
- d. Type – 4

Correct Answer: d

Detailed Solution:

The JDBC Driver Type-4 is better compared to all other drivers because it performs better than all other drivers. No software is required at client side or server side.



QUESTION 5:

In JDBC, all raw data types (including binary documents or images) should be read and uploaded to the database as an array of

- a. int
- b. char
- c. byte
- d. String

Correct Answer: c

Detailed Solution:

All data types should be read and uploaded to the database as an array of bytes.

QUESTION 6:

Which of the following method(s) is/are used to set the query parameters of the PreparedStatement Object?

- a. putString()
- b. insertString()
- c. setString()
- d. setInt()

Correct Answer: c, d

Detailed Solution:

The setter methods (setShort, setString, and so on) for setting input parameter values must specify types that are compatible with the defined SQL type of the input parameter.



QUESTION 7:

Which of the statements are correct about JDBC transactions?

- a. A transaction is a set of successfully executed statements in the database
- b. A transaction is finished when commit() or rollback() is called on the Connection object,
- c. A transaction is finished when commit() or rollback() is called on the Transaction object
- d. A transaction is finished when close() is called on the Connection object.

Correct Answer: b, d

Detailed Solution:

A transaction is finished when commit(), rollback() or close() method is called on the Connection object.

QUESTION 8:

Which one of the following contains date information?

- a. java.sql.TimeStamp
- b. java.sql.Time
- c. java.io.Time
- d. java.io.TimeStamp

Correct Answer: a

Detailed Solution:

java.sql.Time contains only time. Whereas, java.sql.TimeStamp contains both time and date.

QUESTION 9:

Execution of SQL command like SELECT * FROM myTable using JDBC program will return a ResultSet object. This object is

- a. Same as the myTable.
- b. All records in verbatim from the table.
- c. All records in verbatim from the table but those records with null values.
- d. All records in verbatim from the table but those records are not with null values.

Correct Answer: b



QUESTION 10:

The following is a statement in Java using JDBC.

```
Connection con = DriverManager.getConnection  
("jdbc:mysql://localhost:3306/nptel","joy","java");
```

Which of the following statement is **FALSE**?

- a. 3306 is the default MySQL port.
- b. Database name is '*nptel*'
- c. The database server is hosted on IP 127.0.0.1
- d. Password for '*java*' user is '*joy*'

Correct Answer: d

Detailed Solution:

Password for user '*joy*' is '*java*'.



OBJECT ORIENTED PROGRAMMING WITH JAVA

Assignment 12

TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

What is the use of Socket and ServerSocket in Java Networking? Select the appropriate option(s).

- a. The class Socket is used to run two programs in two different machines and then communicate each other.
- b. The class Socket is used to run two programs in the same machines and then communicate each other.
- c. The class ServerSocket is used to run two programs in two different machines and then communicate each other.
- d. The class ServerSocket is used to run a program in a machine and then listen to other programs defined with Socket class.

Correct Answer: d

Detailed Solution:

The ServerSocket and Socket are the classes used to build Client-Server systems.

QUESTION 2:

Consider the following class definition:

```
class Student extends String {  
  
}
```

Which of the following statement(s) is(are) TRUE?

- a. Code will not compile because the body is not defined.
- b. Code will not compile because the class is not declared as public.
- c. Code will not compile because of the super class String.
- d. Code will compile successfully.

Correct Answer: c



Detailed Solution:

One cannot extend a class which is declared as final. The `java.lang.String` class is final.

QUESTION 3:

Execution of SQL command like `SELECT * FROM myTable` using JDBC program will return a `ResultSet` object. This object is

- a. Same as the `myTable`.
- b. All records in verbatim from the table.
- c. All records in verbatim from the table but those records with null values.
- d. All records in verbatim from the table but those records are not with null values.

Correct Answer: b

Detailed Solution:

The `ResultSet` object includes all records stored as an array of records and irrespective of whether a record contains null value(s) or not.

QUESTION 4:

We would like to make a member of a class invisible in all sub classes regardless of what package they are in. Which of the following keyword would achieve this?

- a. `public`
- b. `private`
- c. `protected`
- d. `final`

Correct Answer: b

Detailed Solution:

A private member is not accessible to any sub-class, whether it is within the same package or different package.



QUESTION 5:

Which of the following is/ are reserved keyword(s)?

- a. switch
- b. string
- c. lang
- d. this

Correct Answer: a, d

Detailed Solution:

In Java, String is a class and this is a keyword and thence they are reserved. Since, the Java language is case sensitive “string” is different from String. Therefore, the ‘switch’ and ‘this’ will be considered as reserved.

QUESTION 6:

Which of the following method(s) belong(s) to the String class?

- a. `length()`
- b. `compareTo()`
- c. `equals()`
- d. `append()`

Correct Answer: a, b, c

Detailed Solution:

Consult the String class in java.lang package (<https://docs.oracle.com/javase/7/docs/api/>) to see what are the methods there.



QUESTION 7:

Consider the following piece of code in Java.

```
public class Test{  
    public static void main(String args[]){  
        class Foo{  
            public int i = 3;  
        }  
        Object o = (Object)new Foo();  
        Foo foo = (Foo)o;  
        System.out.println("i = " + foo.i);  
    }  
}
```

Which of the following is the result?

- a. i = 3
- b. The program will not be able to compile successfully.
- c. A ClassCastException is thrown at line 6
- d. A ClassCastException is thrown at line 7

Correct Answer: a

Detailed Solution:

Class Object is a super class of any class and any subclass object can be up casted to its superclass object, hence line 6 and 7 executes without error.

QUESTION 8:

Which of the following statements would NOT cause a compilation error?

- a. float[] = new float(3);
- b. float f2[] = new float[];
- c. float[] f1 = new float[3];
- d. float f3[] = new float[3];
- e. float f5[]={ 1.0f, 2.0f, 2.0f };
- f. float f4[] = new float[] { 1.0f, 2.0f, 3.0f};

Correct Answer: c, d, e, f

Detailed Solution:

Option (c), (d), (e) and (f) are syntactically correct for declaration of an array.



QUESTION 9:

Consider the following piece of code in Java.

```
public class Test {  
    public static void aMethod() throws Exception {  
        try {  
            throw new Exception();  
        }  
        finally {  
            System.out.print("finally ");  
        }  
    }  
    public static void main(String args[]){  
        try {  
            aMethod();  
        }  
        catch (Exception e) {  
            System.out.print("exception ");  
        }  
        System.out.print("finished ");  
    }  
}
```

What is the result, if the above-mentioned program is executed?

- a. finally
- b. exception finished
- c. finally exception finished
- d. Compilation fails

Correct Answer: c

Detailed Solution:

The program is syntactically correct and here for two try blocks, there is one catch block.



QUESTION 10:

Which of the statements are correct about Swing programming?

- a. AWT is a heavyweight programming.
- b. Swing is heavyweight programming.
- c. Swing is lightweight programming.
- d. Both AWT and Swing are lightweight programming

Correct Answer: c

Detailed Solution:

Swing is lightweight compared to the AWT.

*****END*****