



## PROGRAMMING IN JAVA

### Assignment 1

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark:  $10 \times 1 = 10$

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#### **QUESTION 1:**

**What is the incorrect statement about bytecode?**

- a. Java when compiles the source code, it converts it to bytecode.
- b. JVM (Java Virtual Machine) is an interpreter of bytecode.
- c. Bytecode is not portable and it needs to be compiled separately for each platform.
- d. JVM offers a protected environment which helps in enhanced safety for the system.

**Correct Answer: c**

#### **Detailed Solution:**

The program written to execute is saved as .java and this is called source code. This is compiled using command javac as javac filename.java which produces bytecode (.class file) which is portable. This bytecode is passed to interpreter for running using the command java as java filename. As this bytecode is portable, Java achieved platform independence. JVM is a part of JRE which runs the program (interpreter). JVM provides a safe runtime environment enabling automated exception handling also.

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#### **QUESTION 2:**

**Consider the following program**

```
public class Test {  
    public static void main(String[] args) {  
        //***** boolean b = false; ***** //n1  
        String b = "false";  
        switch(b) { // n2  
        case "False":  
            System.out.println("a");  
        }  
    }  
}
```



---

**What is the output of the above code?**

- a. a
- b. Compiler error due to line n1
- c. Compiler error due to line n2
- d. Print nothing

**Correct Answer: d**

**Detailed Solution:**

There is no matching case statement, hence it will print nothing.

---

**QUESTION 3:**

**Which one of the following is not a primitive datatype?**

- a. byte
- b. short
- c. class
- d. long

**Correct Answer: c**

**Detailed Solution:**

class is not a primitive data type.

---

**QUESTION 4:**

**Which of the following is not a keyword in java?**

- a. final
- b. super
- c. integer
- d. extend

**Correct Answer: c, d**

**Detailed Solution:**

Here, final and super are reserved keywords in Java, which cannot be used for naming a variable or class. Integer and extends are the keywords in Java.

---



### **QUESTION 5:**

**Consider the following program.**

```
public class Test{  
    public static void main(String[] args) {  
        int a = 5;  
        a +=6;  
        switch(a-1){  
            case 5: System.out.print("10");break;  
            case 10: System.out.print("15");  
                System.out.print(((a%2 ==0) ? "-even-" : "-odd-"));  
            default: System.out.print(a%2);    }  
        }  
    }
```

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

- a. 15-even-1
- b. 15-odd-1
- c. 15-even-
- d. 15-odd-

**Correct Answer: b**

**Detailed Solution:**

Test by run

---

### **QUESTION 6:**

```
C:\new>javac Simple.java  
'javac' is not recognized as an internal or external command,  
operable program or batch file.
```

**Why does the error “javac is not recognized as an internal or external command” occur?**

- a. Path is not set for java
- b. JDK is not correctly installed
- c. .class file is not found
- d. javac jar is missing from java library



**Correct Answer: a**

**Detailed Solution:**

Both java and javac command can't be used if path environment variable is not set.

---

**QUESTION 7:**

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

```
public class Question{
    public static void main(String args[]){
        char nptel[]={‘1’,‘2’,‘3’,‘4’,‘5’,‘6’};
        System.out.print(_____);
    }
}
```

In the following, some options are given. You have to choose the correct option(s) for the argument in *System.out.print()* function to print the value **102**.

- a. nptel[nptel.length-**2**] + nptel[**0**]
- b. nptel[**0**] + nptel[nptel.length-**2**]
- c. “” + nptel[nptel.length-**2**] + nptel[**0**]
- d. “” + nptel[**0**] + nptel[nptel.length-**2**]

**Correct Answer: a, b**

**Detailed Solution:**

nptel[nptel.length-2] + nptel[0] or nptel[0] + nptel[nptel.length-2] will evaluate the sum of the ascii values of 1 and 5.

---

**QUESTION 8:**

**Which of the following concept that Java doesn't support?**

- a. inheritance
- b. serialization
- c. goto
- d. array

**Correct Answer: c**



**Detailed Solution:**

Java does not support goto, it is reserved as a keyword just in case they wanted to add it to a later version. Unlike C/C++, Java does not have goto statement, but java supports label.

---

**QUESTION 9:**

The subsystem of JVM that is used to load class files is known as \_\_\_\_\_.

- a. Classloader
- b. JRE
- c. JDK
- d. Compiler

**Correct Answer: a**

**Detailed Solution:**

Classloader is part of JVM that helps load class files.

---

**QUESTION 10:**

What is the value of total after executing the following code snippet?

```
int mark = 5;
int grace = 2;
int total = mark + (mark > 6 ? ++grace : --grace);
```

- a. 6
- b. 5
- c. 4
- d. 3

**Correct Answer: a**

**Detailed Solution:**

In ternary expressions, only one of the two right-most expressions are evaluated. Since mark >6 is false, --grace is evaluated and ++grace is skipped. grace is changed from 2 to 1 and total becomes mark + (1) which means 5 + 1 = 6.

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## PROGRAMMING IN JAVA

### Assignment 2

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark:  $10 \times 1 = 10$

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#### **QUESTION 1:**

Following is a program given for this question.

```
public class Question{
    public static void main(String[] args) {
        int[] x = {222, 210, 012};
        for(int i = 0; i < x.length; i++){
            System.out.print(x[i] + "");
        }
    }
}
```

What will be the output of the above program?

- a. 22221010
- b. 12222101
- c. 22101010
- d. 22221012

Correct Answer: a

#### **Detailed Solution:**

Since, `int[2]` numeral value have 0 in leading, therefore, it's taken as octal base (8). So, it's corresponding decimal value is  $(2 \times 8^0) + (1 \times 8^1) = 10$ .

---

#### **QUESTION 2:**

When an array is passed to a method, what value does the method receive?

- a. Reference of the array.
- b. Copy of the array.
- c. First element in the array.
- d. Length of the array.

Correct Answer: a



**Detailed Solution:**

Reference of the array is passed to a method in Java.

---

**QUESTION 3:**

Following is a program given for this question.

```
public class Main{
    public static void main(String args[]) {
        byte x = 28;
        x++;
        x++;
        System.out.print(x);
    }
}
```

What will be the output of the above program?

- a. 28
- b. -29
- c. 30
- d. -31

**Correct Answer: c**

**Detailed Solution:**

The increment operator `++` works here in the normal scenario as there is no assignment operator. So, it will not give any difference between `++x` and `x++`.

---

**QUESTION 4:**

**How many bits are needed for float and double in Java, respectively?**

- a. 32 and 64
- b. 32 and 32
- c. 64 and 64
- d. 64 and 32

**Correct Answer: a**

**Detailed Solution:**

Float needs 4 bytes or 32 bits and Double needs 8 bytes or 64 bits.

---



### **QUESTION 5:**

**Which of the following is a valid *automatic type conversion* in Java?**

- a. short to byte
- b. float to long
- c. int to short
- d. int to long

**Correct Answer: d**

**Detailed Solution:**

Automatic type conversion is possible in the following sequence (*reverse is not possible*):

byte → short → int → long → float → double

### **QUESTION 6:**

**Consider the following program and identify the output.**

```
public class Question{
    public static void main(String[] args) {
        short x = 10;
        x = x * 5;
        System.out.print(x);
    }
}
```

- a. 5
- b. 10
- c. 50
- d. Compilation error

**Correct Answer: d**

**Detailed Solution:**

Compilation Error in “`x = x * 5;`”. This is due to *lossy conversion from int to short*. It works if the type casting is followed, for example, `x = (short) (x * 5);`

### **QUESTION 7:**

**Which of the following is a valid declaration of an object of class say, Student?**

- a. Student obj = new Student;
- b. Student obj = new Student();



- c. obj = new Student();
- d. new Student obj;

**Correct Answer: b**

**Detailed Solution:**

When an object is to be declared it needs to be instantiated, hence the correct syntax of declaring an object is (b).

---

**QUESTION 8:**

**What is the output of the following program?**

```
public class Question{
    public static void main(String[] args) {
        int[] A = {0,1,2};
        for(int i = 0; i < A.length; i++){
            A[i] = A[(A[i] + 3) % A.length];
        }
        for(int i = 0; i < A.length; i++){
            System.out.print(A[i]);
        }
    }
}
```

- a. 210
- b. 120
- c. 012
- d. 201

**Correct Answer: c**

**Detailed Solution:**

The output after execution is 012.

---

**QUESTION 9:**

**Consider the following piece of code.**



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

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

- a. java
- b. npteljava
- c. nptel java
- d. nptel

**Correct Answer: d**

**Detailed Solution:**

The output can be checked by execution.

---

### **QUESTION 10:**

**What is the output of the following program?**

```
public class Main{
    public void static main(String args[]){
        char a = '3';
        int b = 011;
        System.out.println(a+b);
    }
}
```

- a. 60
- b. 3011
- c. 33
- d. Compilation error

**Correct Answer: d**

**Detailed Solution:**

There is a compilation error due to incorrect syntax in the statement `public void static main(String args[]);` it should be `public static void main(String args[]){`

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## PROGRAMMING IN JAVA

### Assignment3

**TYPE OF QUESTION: MCQ**

**Number of questions:10**

**Total mark:  $10 \times 1 = 10$**

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#### **QUESTION 1:**

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

- a. Constructors cannot be synchronized in Java.
- b. Java does not provide a default copy constructor.
- c. A constructor cannot be overloaded.
- d. “this” or “super” can be used in a constructor.

**Correct Answer: a, b, d**

#### **Detailed Solution:**

We can overload constructors just like methods in Java.

---

#### **QUESTION 2 :**

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

- 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: a, b, c**



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### **Detailed Solution:**

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

The distinction between hiding a static method and overriding an instance method has important implications:

The version of the overridden instance method that gets invoked is in the subclass. The version of the hidden static method invoked depends on whether it is invoked from the superclass or the subclass.

---

### **QUESTION 3:**

**Consider the following piece of code.**

```
class Test{
    void exam() {}}

public class Test1 extends Test {
    _____ void exam(){} // insert correct keyword
    public static void main(String[] args) {
        System.out.println(" Correct");
    }
}
```

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

- a. abstract
- b. final
- c. default
- d. public

**Correct Answer: b, d**

### **Detailed Solution:**

final, public are the correct keyword in this case.



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**QUESTION 4:**

**How many instances of abstract class can be created?**

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

**Correct Answer: a**

**Detailed Solution:**

An abstract class cannot be instantiated. So it will have 0 instances.

---

**QUESTION 5:**

**Structuring a Java class such that only methods within the class can access its instance variables is referred to as \_\_\_\_\_.**

- a. object orientation
- b. inheritance
- c. platform independence
- d. encapsulation

**Correct Answer: d**

**Detailed Solution:**

Encapsulation removes access to a class's instance variables from processes outside the class, making Option D the correct answer.

---

**QUESTION 6:**

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



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- a. A final method cannot be overridden in a subclass.
- b. The advantage of private static methods is that they can be reused later if you need to reinitialize the class variable.
- c. Class methods cannot use this keyword as there is no instance for this to refer to.
- d. A final method can be overridden in a subclass.

**Correct Answer: a, b, c**

### **Detailed Solution:**

A final method cannot be overridden in a subclass. Class methods cannot use this keyword as there is no instance for this to refer to. The advantage of private static methods is that they can be reused later if you need to reinitialize the class variable.

---

### **QUESTION 7:**

**Consider the following piece of code.**

```
public class Question{  
    Question() {  
        this();  
    }  
  
    public static void main(String []args) {  
        Question obj = new Question();  
        System.out.println("Java");  
    }  
}
```

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

- a. Java
- b. There will be a compile-time error.
- c. JavaJava.
- d. The program will give a runtime error.

**Correct Answer: b**

### **Detailed Solution:**



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If a constructor calls itself, then the error message “recursive constructor invocation” occurs. The following program is not allowed by the compiler because, inside the constructor, we tried to call the same constructor. The compiler detects it instantly and throws an error.

---

### **QUESTION 8:**

**Consider the following program.**

```
public class Question
{
    public static void main(String[] args) {
        String str = "Programming in java.";
        System.out.println(str.charAt(4)+str.substring(8, 11));
    }
}
```

**What is the output of the above program?**

- a. java
- b. ring
- c. r min
- d. gram

**Correct Answer: b**

### **Detailed Solution:**

Test by a run.

---

### **QUESTION 9:**

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

- a. Hiding internal data from the outside world and accessing it only through publicly exposed methods is known as data encapsulation.
- b. Common behavior can be defined in a superclass and inherited into a subclass using the extends keyword.
- c. The term "class variable" is another name for a non-static field.



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- d. A local variable stores a temporary state; it is declared inside a method.

**Correct Answer: c**

**Detailed Solution:**

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

---

**QUESTION 10:**

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

- a. Static methods in interfaces are never inherited.
- b. 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.
- c. You can prevent a class from being subclassed by using the final keyword in the class's declaration.
- d. An abstract class can only be subclassed; it cannot be instantiated.

**Correct Answer: a, b, c, d**

**Detailed Solution:**

All options are correct.

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## PROGRAMMING IN JAVA

### Assignment 4

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark:  $10 \times 1 = 10$

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#### **QUESTION 1:**

Which of the following is the correct statement for creating a package?

- a. `<package name> package;`
- b. `package <package name>;`
- c. `package;`
- d. `<package name>;`

**Correct Answer: b**

#### **Detailed Solution:**

To define a package, every source file needs to start with the statement ‘package’ followed by the *package name*.

---

#### **QUESTION 2:**

Which of the following source files cannot be included in a package?

- a. classes
- b. interfaces
- c. enumerations
- d. data

**Correct Answer: d**

#### **Detailed Solution:**

To be in a package, the source files, like the classes, interfaces, enumerations, and annotation types must start with a ‘package’ statement with the *package name* at the top of every source file. But data is not a valid source files in the options, so it cannot be included in a package.



### **QUESTION 3:**

**Which of the following is/are used to access a *public* package?**

- a. Refer to the member by its fully qualified name
- b. Import the package member
- c. Import the member's entire package
- d. Import is not mandatory

**Correct Answer: a, b, c**

### **Detailed Solution:**

You can use a package member's simple name if the code you are writing is in the same package as that member or if that member has been imported. To import a specific member into the current file, put an import statement at the beginning of the file before any type definitions but after the package statement, if there is one. To import all the types contained in a particular package, use the import statement with the asterisk (\*) wildcard character.

---

### **QUESTION 4:**

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

- a. Java packages are hierarchical.
- b. `System.out.println()` is a predefined java function.
- c. Java can have a nested class structure.
- d. The Java *static* keyword is a non-access modifier.

**Correct Answer: a**

### **Detailed Solution:**

At first, packages appear to be hierarchical, but they are not. For example, the Java API includes a `java.awt` package, a `java.awt.color` package, a `java.awt.font` package, and many others that begin with `java.awt`. However, the `java.awt.color` package, the `java.awt.font` package, and other `java.awt.xxxx` packages are not included in the `java.awt` package. The prefix `java.awt` (the Java Abstract Window Toolkit) is used for a number of related packages to make the relationship evident, but not to show inclusion. All the other options are correct.

---



### **QUESTION 5:**

Consider the program given below.

```
public class Main{
    public static void main(String args[]){
        System.out.println(cos(2*PI));
    }
}
```

**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. 1.0
- d. 3.14

**Correct Answer: a**

**Detailed Solution:**

The program gives a compile time error as the *Math* class is missing. The static import statement needs to be used to import the static members (e.g., PI) of java.lang.Math.

```
import static java.lang.Math.*;
```

---

### **QUESTION 6:**

**Which of the following is the minimum requirement for executing a Java program?**

- a. JDK
- b. JRE
- c. JDK without JRE
- d. JRE without JDK

**Correct Answer: b, d**

**Detailed Solution:**

JRE (Java Runtime Environment) is required for the execution of the Java programs. JDK contains JRE by default. Therefore, if we talk about minimum requirement, then both **b** and **d** options are correct.

---



### **QUESTION 7:**

**Which of the following is required for developing a Java program?**

- a. JDK
- b. JRE
- c. JDK without JRE
- d. JRE without JDK

**Correct Answer: a**

**Detailed Solution:**

JDK (Java Development Kit) is required for developing the Java programs. Since, JDK already comes packed with JRE and there is no option to select JDK without JRE, option **a** is the only valid option.

---

### **QUESTION 8:**

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

- a. Java byte code is machine dependent.
- b. Java byte code is generated by the compiler.
- c. Java byte code is generated by the interpreter.
- d. Java byte code is machine independent.

**Correct Answer: b, d**

**Detailed Solution:**

Java follows the following pipeline:

Source Code → **Java Compiler** → Java Bytecode → **Java Interpreter (JVM)** → Machine Code → Output

Therefore, bytecode is generated by compiler. Option **b** is correct.

Java byte code is platform-independent as the java compiler for different environment compiles the file in the JVM readable format. Option **d** is also correct.

---



### **QUESTION 9:**

**Which of the following is an advantage of methods?**

- a. Code re-usability
- b. Platform independence.
- c. Fast execution of codes.
- d. Removes compilation error.

**Correct Answer: a**

**Detailed Solution:**

The benefits of methods in java are:

- It allows code reusability (define once and use multiple times)
- You can break a complex program into smaller chunks of code
- It increases code readability.

Therefore, option **a** is correct.

---

### **QUESTION 10:**

**Consider the following programs:**

```
public class Main1{
    public static void main(String args[]){
        int number = 10;
        System.out.println(number++ + ++number);
    }
}
```

```
public class Main2{
    public static void main(String args[]){
        int number = 10;
        System.out.println(++number + number++);
    }
}
```



**Choose correct statement about the output of this code segment.**

- a. Both pre-increment and post-increment operators becomes pre-increment during print.
- b. Both pre-increment and post-increment operators becomes post-increment during print.
- c. Both *Main1* and *Main2* classes give the same output.
- d. Pre-increment and post-increment operators don't work during print.

**Correct Answer: c**

**Detailed Solution:**

The output of both the program are 22. Therefore, option **c** is correct and we can eliminate option **d** that the operators don't work. Further, the operators are doing exactly what they are supposed to do i.e. pre-increment first increases the values and post-increment increases the value during the next operation. The print statement is the next operation; hence it received the post incremented value as well making option **a** and **b** invalid.

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\*\*\*\*\*END\*\*\*\*\*



## PROGRAMMING IN JAVA

### Assignment 5

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark:  $10 \times 1 = 10$

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#### **QUESTION 1:**

Consider the following program.

```
class Question{  
    int i;  
}  
  
class Test extends Question{  
    int j;  
    void display(){  
        super.i = j + 1;  
        System.out.println(j + " " + i);  
    } }  
  
public class Query{  
    public static void main(String args[]){  
        Test obj = new Test();  
        obj.i=1;  
        obj.j=2;  
        obj.display();  
    } }
```

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

- a. 2 2
- b. 3 3
- c. 2 3



---

d. 32

**Correct Answer: c**

**Detailed Solution:**

The output can be checked by execution.

---

**QUESTION 2:**

**Consider the following piece of code.**

```
package java.util;  
public interface EventListener  
{  
}
```

**Which of the following statement(s) is/are true for the above code?**

- a. It is an empty interface.
- b. It is a tag interface.
- c. It is a marker interface.
- d. It is a nested interface.

**Correct Answer: a, b, c**

**Detailed Solution:**

An empty interface is known as tag or marker interface.

---



**QUESTION 3:**

**What is the output of the following code?**

```
interface A {  
    int x=10;  
    void m1();  
}  
  
class B implements A {  
    int x = 20;  
    public void m1(){  
        System.out.println("java");  
    }  
}  
  
public class Test {  
    public static void main(String[] args){  
        A a = new B();  
        a.m1();  
        System.out.println(a.x);  
    }  
}
```

- a. java  
10
- b. java  
20
- c. 10  
java
- d. 20  
java

**Correct Answer: a**

**Detailed Solution:**

The output can be checked by execution.



---

#### **QUESTION 4:**

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

- a. All abstract methods defined in an interface must be implemented.
- b. The variables defined inside an interface are static and final by default.
- c. An interface is used to achieve full abstraction.
- d. Inside an interface, a constructor can be called using the super keyword with hierarchy.

**Correct Answer: a, b, c**

**Detailed Solution:**

A constructor cannot be called inside an interface using the super keyword with hierarchy.

---

#### **QUESTION 5:**

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

- 1. A class can extend more than one class.
  - 2. A class can extend only one class but many interfaces.
  - 3. An interface can extend many interfaces.
  - 4. An interface can implement many interfaces.
  - 5. A class can extend one class and implement many interfaces.
- a. 1 and 2
  - b. 2 and 4
  - c. 3 and 5
  - d. 3 and 4

**Correct Answer: c**

**Detailed Solution:**

An interface can extend many interfaces. A class can extend one class and implement many interfaces.

---



### **QUESTION 6:**

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

- a. Abstract class can have abstract and non-abstract methods.
- b. Abstract class can have final, non-final, static and non-static variables.
- c. Interface has only static and final variables.
- d. Interface can provide the implementation of an abstract class.

**Correct Answer: a, b, c**

**Detailed Solution:**

Interface can't provide the implementation of an abstract class.

### **QUESTION 7:**

**Consider the following piece of code.**

```
public class Question {  
    public static void main(String args[]) {  
        try {  
            int a, b;  
            b = 0;  
            a = 25 / b;  
            System.out.print("A");  
        } catch(ArithmetricException e) {  
            System.out.print("B");  
        }  
        finally  
        {  
            System.out.print("C");  
        }  
    }  
}
```

**What is the output of the above code?**



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

**Correct Answer: c**

**Detailed Solution:**

Test by execution.

---

**QUESTION 8:**

The class at the top of exception class hierarchy is .....

- a. Object
- b. Throwable
- c. Exception
- d. ArithmeticException

**Correct Answer: b**

**Detailed Solution:**

The class at the top of the exception class hierarchy is the Throwable class, which is a direct subclass of the Object class.

---

**QUESTION 9:**

Which of these class is superclass of every class in Java?

- a. Object class
- b. Abstract class
- c. String class
- d. ArrayList class

**Correct Answer: a**

**Detailed Solution:**

All classes in java are inherited from Object class.

---



**QUESTION 10:**

```
interface calculate{
    int VAR = 0;
    void cal(int item);
}

class display implements calculate{
    int x;
    public void cal(int item) {
        if (item<2)
            x = VAR;
        else
            x = item * item;
    }
}
public class Question {
    public static void main(String args[]) {
        display[] arr=new display[3];
        for(int i=0;i<3;i++)
            arr[i]=new display();
        arr[0].cal(0);
        arr[1].cal(1);
        arr[2].cal(2);
        System.out.print(arr[0].x+"" + arr[1].x + " " +
arr[2].x);
    }
}
```

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

- a. 0 1 2
- b. 0 0 4
- c. 0 2 4



---

d. 0 4 4

**Correct Answer: b**

**Detailed Solution:**

The output can be checked by execution.

---

\*\*\*\*\*END\*\*\*\*\*



## PROGRAMMING IN JAVA

### Assignment 6

**TYPE OF QUESTION: MCQ**

**Number of questions:** 10

**Total mark:**  $10 \times 1 = 10$

---

#### **QUESTION 1:**

**Which of the following is NOT TRUE in Java?**

- a. Every thread has a priority.
- b. JVM allows multiple threads of execution running concurrently.
- c. Threads with higher priority are executed first.
- d. You cannot set a maximum priority value that a thread can have.

**Correct Answer: d**

**Detailed Solution:**

A thread is a thread of execution in a program. The Java Virtual Machine allows an application to have multiple threads of execution running concurrently. Every thread has a priority. Threads with higher priority are executed in preference to threads with lower priority. The MAX\_PRIORITY field can be used to set priority value of a thread in Java.

---

#### **QUESTION 2:**

**Consider the following code:**

```
class PrimeRun implements Runnable {  
    long minPrime;  
    PrimeRun(long minPrime) {  
        this.minPrime = minPrime;  
    }  
  
    public void run() {  
        // compute primes larger than minPrime  
        . . .  
    }  
}
```

**Which of the following is TRUE regarding the above code?**



- a. Creating a thread in Java using Runnable interface
- b. Thread creation by declaring a class to be a subclass of Thread
- c. Overriding the run method of class Thread
- d. The class implements the run method.

**Correct Answer: a, d**

**Detailed Solution:**

There are two ways to create a new thread of execution.

**One is to declare a class to be a subclass of Thread.**

*This subclass should override the run method of class Thread. An instance of the subclass can then be allocated and started.*

**The other way to create a thread is to declare a class that implements the Runnable interface.**

*That class then implements the run method. An instance of the class can then be allocated, passed as an argument when creating Thread, and started. The same example is given here.*

---

**QUESTION 3:**

**Which of the following cannot 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 the related package.

**Correct Answer: c, d**

**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:**

**What is the use of `sleep(long millis)` function in Java?**

- a. Pauses the thread execution for exactly the given time with no dependency.
- b. Pauses the thread execution but depends on precision of system timers.
- c. Pauses the thread execution but depends on precision of system schedulers.
- d. Pauses the thread execution but depends on precision of both system timers and schedulers.

**Correct Answer: d**

**Detailed Solution:**

The `sleep(long millis)` function causes the currently executing thread to sleep (*temporarily cease execution*) for the specified number of milliseconds, subject to the precision and accuracy of system timers and schedulers.

---

#### **QUESTION 5:**

**Which method `start()` will do which of the following?**

- a. Causes this thread to begin execution.
- b. Either start the execution for new thread or pause an ongoing thread.
- c. The JVM calls the run method of this thread.
- d. Recovers a thread from deadlock and begin execution

**Correct Answer: a, c**

**Detailed Solution:** The `start()` method causes this thread to begin execution; the Java Virtual Machine calls the `run` method of this thread. This method cannot pause execution of a thread. Further, the threads are inherently deadlock-prone.

---

#### **QUESTION 6:**

**Which of the following is not platform independent in Java?**

- a) Everything in Java thread is platform dependent.
- b) The thread constructor with the `stackSize` parameter is platform dependent.
- c) The inheritance in java is platform dependent as multiple classes are involved.
- d) There is no platform dependency in Java.

**Answer : b**



### Explanation:

```
public Thread(ThreadGroup group, Runnable target, String name, long stackSize)
```

The above constructor allocates a new Thread object so that it has target as its run object, has the specified name as its name, and belongs to the thread group referred to by group, and has the specified stack size. This constructor is identical to Thread(ThreadGroup,Runnable,String) with the exception of the fact that it allows the thread stack size to be specified. The stack size is the approximate number of bytes of address space that the virtual machine is to allocate for this thread's stack. The effect of the stackSize parameter, if any, is highly platform dependent. On some platforms, specifying a higher value for the stackSize parameter may allow a thread to achieve greater recursion depth before throwing a StackOverflowError. Similarly, specifying a lower value may allow a greater number of threads to exist concurrently without throwing an OutOfMemoryError (or other internal error). The details of the relationship between the value of the stackSize parameter and the maximum recursion depth and concurrency level are platform-dependent. On some platforms, the value of the stackSize parameter may have no effect whatsoever.

Due to the platform-dependent nature of the behavior of this constructor, extreme care should be exercised in its use. The thread stack size necessary to perform a given computation will likely vary from one JRE implementation to another. In light of this variation, careful tuning of the stack size parameter may be required, and the tuning may need to be repeated for each JRE implementation on which an application is to run.

---

### **QUESTION 7:**

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

```
public class Question extends Thread{
    public void run(){
        for(int i=1;i<5;i++){
            System.out.println(++i);
        }
    }
    public static void main(String args[]){
        Question t1=new Question();
        t1.run();
    }
}
```

**What is the output of the above program?**



- a. 1  
3
- b. 2  
4  
6  
8
- c. Runtime error
- d. 2  
4

**Correct Answer: b**

**Detailed Solution:**

The increment operators increase the value of **i** to **2** in the first run. Afterwards, two increments are happening till **i < 8** condition is not satisfied.

---

### **QUESTION 8:**

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

```
public class Main{
    public static void main(String[]args) {
        Thread thread=Thread.currentThread();
        thread.run();
        System.out.print(thread.activeCount());
    }
}
```

- a. 1
- b. 10
- c. 01
- d. 11

**Correct Answer: a**

**Detailed Solution:**

**java.lang.Thread.activeCount()** : Returns an estimate of the number of active threads in the current thread's thread group and its subgroups.

---



### **QUESTION 9:**

**Which of the following method returns a reference to the currently executing thread object?**

- a. public static boolean interrupted()
- b. public static Thread currentThread()
- c. public final boolean isAlive()
- d. public final void suspend()

**Correct Answer: b**

**Detailed Solution:**

Only *public static Thread currentThread()* method returns a reference to the currently executing thread object among the options.

---

### **QUESTION 10:**

**Which of the following methods can be used to reduce over-utilization of CPU?**

- a. public static void yield()
- b. public static void main(String args[])
- c. public static void sleep(long millis)
- d. public void start()

**Answer: a**

**Explanation:**

*public static void yield()* gives a hint to the scheduler that the current thread is willing to yield its current use of a processor. The scheduler is free to ignore this hint.

Yield is a heuristic attempt to improve relative progression between threads that would otherwise over-utilise a CPU. Its use should be combined with detailed profiling and benchmarking to ensure that it actually has the desired effect.

It is rarely appropriate to use this method. It may be useful for debugging or testing purposes, where it may help to reproduce bugs due to race conditions. It may also be useful when designing concurrency control constructs such as the ones in the `java.util.concurrent.locks` package.

---



---

## PROGRAMMING IN JAVA

### Assignment7

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark:  $10 \times 1 = 10$

---

#### **QUESTION 1:**

Which of these is a type of IO stream in Java?

- a. Integer stream
- b. Short stream
- c. Byte stream
- d. Character stream

**Correct Answer: c, d**

**Detailed Solution:**

Java defines only two types of streams: Byte stream and character stream. Others are not streams.

---

#### **QUESTION 2:**

Which of the following is a class in `java.io` package?

- a. FileReader
- b. ObjectInput
- c. ObjectOutput
- d. DataInput

**Correct Answer: a**

**Detailed Solution:**

FileReader is a class in `java.io` package. All others are interfaces.

---



### **QUESTION 3:**

**Consider the following program.**

```
import java.io.*;
public class Question {
    public static void main(String[] args)
    {
        try {
            PrintWriter writer = new PrintWriter(System.out);
            writer.write(64+'2');
            writer.close();
        }
        catch (Exception e) {
            System.out.println(e);
        }
    }
}
```

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

- a. It will give compile-time error.
- b. B
- c. 66
- d. r

**Correct Answer: d**

**Detailed Solution:**

The expression `64+'2'` add 64 with 50(i.e, Ascii value of 2)=114 and print the corresponding char, in this case, `r`.

---

### **QUESTION 4:**

**Consider the following program.**

```
import java.io.*;
public class files
{
    public static void main(String args[])
    {
        File obj = new File("java/programm/2023");
        System.out.print(obj.getName());
    }
}
```



---

**What is the output of the above code?**

- a. java/programm/2023
- b. java/programm/
- c. java
- d. 2023

**Correct Answer: d**

**Detailed Solution:**

Test by run.

---

**QUESTION 5:**

**Which method is used to read b length bytes from the input stream into an array?**

- a. public void read(int b) throws IOException { }
- b. public int read(byte[ ] b) throws IOException { }
- c. public void read(byte[ ] b) throws IOException { }
- d. public int read(int b) throws IOException { }

**Correct Answer: b**

**Detailed Solution:**

public int read(byte[ ] b) throws IOException { } is used to read b length bytes from the input stream into an array.

---

**QUESTION 6:**

**How many standard streams Java can support?**

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

**Correct Answer: b**

**Detailed Solution:**

The Java platform supports three Standard Streams: Standard Input, accessed through System.in; Standard Output, accessed through System.out; and Standard Error, accessed through System.err.



---

### **QUESTION 7:**

**Which of the following stream is different from others?**

- a. System.in
- b. System.out
- c. PrintStream
- d. FileOutputStream

**Correct Answer: c**

**Detailed Solution:**

Print stream is a virtual stream, which add functionality to already existing streams by wrapping them in a new object. All others are physical streams (i.e., tied to some IO device that is producing or consuming bytes or characters).

---

### **QUESTION 8:**

**Which of the following is used to read a string from the input stream?**

- a. get()
- b. readLine()
- c. getLine()
- d. read()

**Correct Answer:b**

**Detailed Solution:**

readLine() : Reads the next line of text from the input stream and return it as a String.

---

### **QUESTION 9:**

**Which of the following class(es) can be used for handling files in Java?**

- a. java.files
- b. java.io.File
- c. java.io
- d. java.Filehandling



---

**Correct Answer: b**

**Detailed Solution:**

To access the file handling methods, we need to use Java.io.File.

---

**QUESTION 10:**

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

- a. The default delimiters for a Scanner object are the white space characters.
- b. The Scanner class has instance methods for reading each of the Java primitive types except char.
- c. The Scanner methods do not throw any checked exceptions.
- d. The Scanner class can be found in the java.util package.

**Correct Answer: a, b, c, d**

**Detailed Solution:**

All options are correct.

---



## PROGRAMMING IN JAVA

### Assignment8

**TYPE OF QUESTION: MCQ**

**Number of questions: 10**

**Total mark:  $10 \times 1 = 10$**

---

#### **QUESTION 1:**

Which of the following is **NOT** a class of **java.awt package?**

- a. Color
- b. Composite
- c. Container
- d. Cursor

**Correct Answer: b**

#### **Detailed Solution:**

Composite is an interface of the **java.awt package**.

---

#### **QUESTION 2:**

Which of the following is/are **NOT** an exception of **java.awt package?**

- a. HeadlessException
- b. AWTException
- c. FontFormatException
- d. IllegalStateException

**Correct Answer: d**

#### **Detailed Solution:**

IllegalStateException does not belong to **java.awt package**.

---

#### **QUESTION 3:**

Which of the following method is/are of class **button** in **java.awt package** ?

- a. getLabel()



- b. setLabel(String label)
- c. getCurrent()
- d. getItem(int index)

**Correct Answer: a, b**

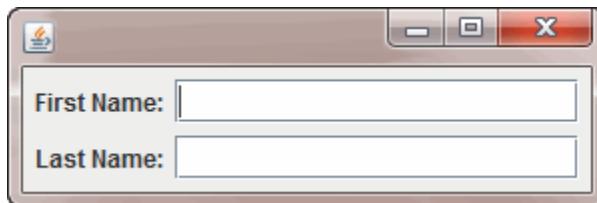
**Detailed Solution:**

setLabel(String label) method Changes this button's label to be the String argument and and getLabel() method returns the current label of the button.

---

**QUESTION 4:**

Which of the following is TRUE about the following GUI?



- a. There is a Frame and two TextFields.
- b. There is a Frame with two Labels and two non-editable TextFields.
- c. There are two Labels.
- d. There is a Frame with two Labels and two TextFields.

**Correct Answer: d**

**Detailed Solution:**

There is a Frame with two Labels and two TextFields in the given GUI.

---

**QUESTION 5:**

Which of the following is TRUE regarding check box and radio button?

- a. Check box is used for single selection item whereas radio button is used for multiple selection.
- b. Check box is used for multiple selection items whereas radio button is used for single selection.
- c. Both are used for multiple as well as single item selection.
- d. Checkbox is always preferred than radio buttons.



**Correct Answer: b**

**Detailed Solution:**

Check box is used for multiple selection items whereas radio button is used for single selection. For example, if a form is asking for your favorite hobbies, there might be multiple correct answers to it, in that case check box is preferred. And if a form is asking about gender, there must be only one true option among the multiple choices, in that case radio buttons are used.

---

**QUESTION 6:**

**Which of the following is TRUE about check box in Java?**

- a. A check box can be in either an "on" (true) or "off" (false) state.
- b. Clicking on a check box changes its state from "on" to "off," or from "off" to "on."
- c. A check box can be in an "on" (true) and in "off" (false) state simultaneously.
- d. Check boxes cannot be grouped together.

**Correct Answer: a, b**

**Detailed Solution:**

A check box is a graphical component that can be in either an "on" (true) or "off" (false) state. Clicking on a check box changes its state from "on" to "off," or from "off" to "on.". A check box cannot be in both "on" and "off" state simultaneously. Further, several check boxes can be grouped together under the control of a single object, using the CheckboxGroup class. In a check box group, at most one button can be in the "on" state at any given time. Clicking on a check box to turn it on forces any other check box in the same group that is on into the "off" state.

---

**QUESTION 7:**

**Which of the following method is used to remove all items from scrolling list in java.awt.list?**

- a. hide()
- b. remove()
- c. clear()
- d. close()

**Correct Answer: c**

**Detailed Solution:**

The function clear() in java.awt.list is used for remove all items from scrolling list.



---

### **QUESTION 8:**

**Which of the following statement is FALSE about the update() in java.awt package?**

- a. Sets the color of the graphics context to be the foreground color of this component.
- b. Calls this component's paint method to completely redraw this component.
- c. Updates the component by checking an online repository.
- d. Clears this component by filling it with the background color.

**Correct Answer: c**

#### **Detailed Solution:**

The update() function does not update the component by checking an online repository rather it, sets the color of the graphics context to be the foreground color of this component, calls this component's paint method to completely redraw this component and clears this component by filling it with the background color.

---

### **QUESTION 9:**

**Which of the following is the latest graphics and media package for Java?**

- a. Applet
- b. AWT
- c. Swing
- d. JavaFX

**Correct Answer: d**

#### **Detailed Solution:**

JavaFX is a set of latest graphics and media packages in Java that enables developers to design, create, test, debug, and deploy rich client applications that operate consistently across diverse platforms.

More details can be found here: <https://docs.oracle.com/javafx/2/overview/jfxpub-overview.htm>

---

### **QUESTION 10:**

**If setText(String text) is a method of Label class, then why it is called non editable?**

- a. Because user-input is unavailable during runtime.
- b. A Label is just a TextField with non-editable property turned on.



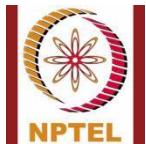
- c. Labels are editable by default.
- d. setText(String text) is not a method of Label class.

**Correct Answer: a**

**Detailed Solution:**

A label class is non-editable during runtime by the user, but internal functions can change the text using the setText(String text) function.

---



## OBJECT ORIENTED PROGRAMMING WITH JAVA

### Assignment-9

**TYPE OF QUESTION: MCQ**

**Number of questions: 10**

**Total mark:  $10 \times 1 = 10$**

---

#### **QUESTION 1:**

**Which of the following is/are correct regarding events in Java?**

- a. *EventObject* is super class of all the events.
- b. *AdjustmentEvent* will be notified if scroll bar is manipulated.
- c. All the classes and methods required for even handling in Java is in *java.io* package.
- d. *getID()* method can be used to determine the name of an event.

**Correct Answer: a, b**

**Detailed Solution:**

*EventObject* class is a super class of all the events and is defined in *java.util* package. *AdjustmentEvent* is generated when a scroll bar is manipulated. All the classes and methods required for even handling in Java is in *java.awt* package. The method *getID()* is used to determine the type of event.

---

#### **QUESTION 2:**

**Which of the following classes is used to display a message dialog in Java Swing?**

- a. *JOptionPane*
- b. *JDialog*
- c. *JMessageDialog*
- d. *JFrame*

**Correct Answer: a**

**Detailed Solution:**

*JOptionPane* is used to display a message dialog in Java Swing.

---

#### **QUESTION 3:**



Which of the following event is occurred when a button is pressed, a list item is double-clicked or a menu item is selected?

- a. AdjustmentEvent
- b. ActionEvent
- c. ContainerEvent
- d. ComponentEvent

**Correct Answer: b**

**Detailed Solution:**

ActionEvent is generated when a button is pressed, a list item is double-clicked or a menu item is selected.

---

**QUESTION 4:**

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 programming.

---

**QUESTION 5:**

Event class is defined in which of the following libraries?

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

**Correct Answer: d**

**Detailed Solution:**



Event class is defined in java.util library.

---

### **QUESTION 6:**

Which of the following is/are class(es) in javax.swing package?

- a. BoxLayout
- b. MenuElement
- c. JComponent
- d. Scrollable

**Correct Answer: a, c**

#### **Detailed Solution:**

MenuElement:

Any component that can be placed into a menu should implement this interface.

Scrollable:

An interface that provides information to a scrolling container like JScrollPane.

All others are Class.

---

### **QUESTION 7:**

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

- a. Swing component **frame** does not support Window Listener.
- b. Swing component **combobox** does not support Window Listener.
- c. Swing component **checkbox** does not support Window Listener.
- d. Swing component **dialog** does not support Window Listener.

**Correct Answer: b, c**

#### **Detailed Solution:**

Swing component **frame** support Window Listener.

Swing component **dialog** support Window Listener.

Swing component **combobox** does not support Window Listener.

Swing component **checkbox** does not support Window Listener.

---

### **QUESTION 8:**



A class which implements the ActionListener interface, also it must implement which of the following methods?

- a. void handle( ActionEvent e )
- b. void actionPerformed( ActionEvent e )
- c. void eventDispatched( AWTEvent e )
- d. String getActionCommand( ActionEvent e )

**Correct Answer: b**

**Detailed Solution:**

A class which implements the ActionListener interface must implement void actionPerformed( ActionEvent e ).

---

**QUESTION 9:**

**When a component is added or removed, which of the following events is generated?**

- a. ComponentEvent
- b. ContainerEvent
- c. FocusEvent
- d. InputEvent

**Correct Answer: b**

**Detailed Solution:**

A ContainerEvent is generated when a component is added to or removed from a container. It has two integer constants COMPONENT\_ADDED & COMPONENT\_REMOVED.

---

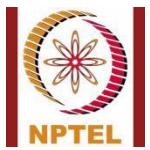
**QUESTION 10:**

**Which of these packages contains all the event handling interfaces?**

- a. java.lang
- b. java.awt
- c. java.awt.event
- d. java.event

**Correct Answer: c**

**Detailed Solution:**



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java.awt.event contains all the event handling interfaces.

---

\*\*\*\*\*END\*\*\*\*\*



## PROGRAMMING IN JAVA

### Assignment10

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark:  $10 \times 1 = 10$

---

#### **QUESTION 1:**

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

- a. TCP is not reliable.
- b. UDP is most reliable.
- c. TCP is fast and UDP is slow.
- d. In HTTPS, all communication between two computers are encrypted.

**Correct Answer: d**

#### **Detailed Solution:**

TCP is a reliable but slow. UDP is not reliable but comparatively fast. HTTPS is the secure version of HTTP, where all communications between two computers are encrypted.

---

#### **QUESTION 2:**

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

- a. DatagramSocket implements Object.
- b. DatagramSocket implements Closeable.
- c. DatagramSocket extends Object.
- d. DatagramSocket extends Closeable.
- e. DatagramSocket extends Object implements Closeable

**Correct Answer: e**

#### **Detailed Solution:**

public class **DatagramSocket** extends *Object* implements *Closeable* is the class that represents a socket for sending and receiving datagram packets.



---

**QUESTION 3:**

Which of the following is/are interface(s) present in java.net package?

- a. InterfaceAddress
- b. FileNameMap
- c. DatagramPacket
- d. DatagramSocket

**Correct Answer: b**

**Detailed Solution:**

FileNameMap is an interface in java.net package and the other options are classes from the same package.

---

**QUESTION 4:**

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

- a. Addresses belongs to a Low-Level API.
- b. Sockets belong to High-Level API.
- c. URIs and URLs are Low-Level API.
- d. Interfaces are High-Level API.

**Correct Answer: a**

**Detailed Solution:**

The java.net package can be roughly divided in two sections:

- A *Low Level API*, which deals with the following abstractions:
    - *Addresses*, which are networking identifiers, like IP addresses.
    - *Sockets*, which are basic bidirectional data communication mechanisms.
    - *Interfaces*, which describe network interfaces.
  - A *High Level API*, which deals with the following abstractions:
    - *URIs*, which represent Universal Resource Identifiers.
    - *URLs*, which represent Universal Resource Locators.
    - *Connections*, which represents connections to the resource pointed to by *URLs*.
-



---

**QUESTION 5:**

In context of the following URL, identify the correct option.

<https://nptel.ac.in>

- a. There is no protocol provided in the above link.
- b. The website provides a secure connection.
- c. The given link is incomplete and hence cannot open a website.
- d. The [ac.in](#) refers to the website path.

**Correct Answer: b**

**Detailed Solution:**

Resource name is nptel.ac.in. The protocol used is https and hence provides a secure connection to the website. The link is complete in all aspects and hence can open a website (*if hosted*). The [ac.in](#) portion of the website is top-level domain part and not a path.

---

**QUESTION 6:**

Which of the following is/are application layer protocol(s)?

- a. TCP
- b. UDP
- c. ARP
- d. SMTP

**Correct Answer: d**

**Detailed Solution:**

TCP, UDP are transport layer protocols. ARP is a Network - IP layer protocol. SMTP is Application layer protocol.

---

**QUESTION 7:**

What is true about IP:PORT in the following options?

- a. Port number 21 is the default FTP port.
- b. Only port number is required for FTP connections and no IP is required.
- c. 127.0.0.1 and localhost are same.



- 
- d. There is no concept of PORT in IPv6.

**Correct Answer: a, c**

**Detailed Solution:**

Port number 21 is the default FTP port. For a FTP connection both the IP and the PORT is required. 127.0.0.1 is the loop-back IP address of a system, which is same as localhost domain. The concept of PORT in IPv6 is same as in IPv4 although there is some variation in the syntax.

---

**QUESTION 8:**

**Which of the following is/are valid Data Definition Language (DDL) command(s)?**

- a. SELECT
- b. INSERT
- c. UPDATE
- d. ALTER TABLE

**Correct Answer: d**

**Detailed Solution:**

ALTER TABLE is a Data Definition Language (DDL).

---

**QUESTION 9:**

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

- a. byte
- b. vector
- c. char
- d. file

**Correct Answer: a**

**Detailed Solution:**

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

---

**QUESTION 10:**



---

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

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

**Correct Answer: d**

**Detailed Solution:**

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

---

\*\*\*\*\*END\*\*\*\*\*



---

## OBJECT ORIENTED PROGRAMMING WITH JAVA

### Assignment11

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark:  $10 \times 1 = 10$

---

#### **QUESTION 1:**

Which of the following interfaces is used to manage transactions in JDBC?

- a. Connection
- b. Statement
- c. Transaction
- d. ResultSet

**Correct Answer: a**

#### **Detailed Solution:**

The Connection interface is used to manage transactions in JDBC. It provides methods for starting, committing, and rolling back transactions. The other interfaces listed are also used in JDBC, but not for managing transactions specifically.

---

#### **QUESTION 2:**

Which of the following interfaces is used to execute parameterized SQL statements in JDBC?

- a. ResultSet
- b. PreparedStatement
- c. Statement
- d. Connection

**Correct Answer: b**

#### **Detailed Solution:**

The PreparedStatement interface is used to execute parameterized SQL statements in JDBC. It provides methods for creating a prepared statement with placeholders for parameters, setting the parameter values, and executing the statement. The other interfaces listed are also used in JDBC, but not for executing parameterized SQL statements specifically.

---



---

### **QUESTION 3:**

**Which of the following statements is true?**

- a. The executeQuery( ) method of java.sql.Statement interface is used to execute a DELETE statement.
- b. The executeQuery( ) method of java.sql.Statement interface is used to execute a SELECT statement.
- c. The executeQuery( ) method of java.sql.Statement interface is used to execute a INSERT statement.
- d. The executeQuery( ) method of java.sql.Statement interface is used to execute a UPDATE statement.

**Correct Answer: b**

**Detailed Solution:**

The executeQuery() method of this interface is used to execute a SELECT statement .

---

### **QUESTION 4:**

**Which of the following statements is true?**

- a. The executeUpdate( ) method of java.sql.Statement interface is used to execute a DELETE statement.
- b. The executeUpdate( ) method of java.sql.Statement interface is used to execute a SELECT statement.
- c. The executeUpdate( ) method of java.sql.Statement interface is used to execute a INSERT statement.
- d. The executeUpdate( ) method of java.sql.Statement interface is used to execute a UPDATE statement.

**Correct Answer: a, c, d**

**Detailed Solution:**

The executeUpdate( ) method is used to execute an INSERT, UPDATE, or DELETE statement.  
The executeQuery( ) method of this interface is used to execute a SELECT statement .

---



---

### **QUESTION 5:**

**Which of the following statements is true about JDBC?**

- a. JDBC is a programming language.
- b. JDBC is a type of database.
- c. JDBC is an API for accessing relational databases from Java programs.
- d. JDBC is used to create graphical user interfaces.

**Correct Answer: c**

**Detailed Solution:**

JDBC is an API for accessing relational databases from Java programs.

---

### **QUESTION 6:**

**Which of the following statements is true about the PreparedStatement interface in JDBC?**

- a. PreparedStatement objects are precompiled before they are executed.
- b. PreparedStatement objects can only be used for SELECT statements.
- c. PreparedStatement objects cannot accept parameters at runtime.
- d. PreparedStatement objects can be reused for multiple SQL statements.

**Correct Answer: a, d**

**Detailed Solution:**

The PreparedStatement interface in JDBC allows SQL statements to be precompiled before they are executed, which can improve performance. PreparedStatements can be used for both SELECT and non-SELECT statements, and they can accept parameters that are supplied at runtime. PreparedStatements can also be reused for multiple SQL statements with different parameter values, which can further improve performance.

---

### **QUESTION 7:**

**Which of the following statements is true about batch updates in JDBC?**

- a. Batch updates can only be used for INSERT statements.
- b. Batch updates allow multiple SQL statements to be executed in a single transaction.
- c. Batch updates are executed immediately as soon as they are added to the batch.
- d. Batch updates can be rolled back.

**Correct Answer: b, d**

**Detailed Solution:**



Batch updates in JDBC allow multiple SQL statements to be executed in a single transaction. They can be used for any type of SQL statement, including INSERT, UPDATE, and DELETE. Batch updates are executed when the batch is executed, either explicitly using the executeBatch() method or implicitly when the batch size limit is reached. Batch updates can be rolled back using the rollback() method.

---

### **QUESTION 8:**

**Consider the following code.**

```
import java.sql.*;
class InsertPrepared{
    public static void main(String args[]) {
        try{
            Class.forName("com.mysql.jdbc.Driver");
            Connection con=DriverManager.getConnection(
                "jdbc:mysql://localhost/database","Java","july");
            PreparedStatement stmt=con.prepareStatement("INSERT INTO
table VALUES(?,?)");
            stmt.setString(1,"one");
            stmt.setString(2,"two");
            stmt.executeUpdate();
            con.close();
        }
        catch(Exception e){
            System.out.println(e);
        }
    }
}
```

**What is the output of the above code?**

- a. Compilation error
- b. Runtime error
- c. 1, "one" is replaced by 2,"two" in the table.
- d. "one" and "two" both are inserted in different columns of same row.

**Correct Answer: d**

**Detailed Solution:**



---

It will simply insert a new row with values "Joe" and "Dan" into a table in the "database" database using JDBC.

---

**QUESTION 9:**

**Which type of JDBC driver translates JDBC calls into native database API calls?**

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

**Correct Answer: b**

**Detailed Solution:**

A Type 2 driver is also known as a "Native-API/partly Java driver" and it translates JDBC calls into native database API calls.

---

**QUESTION 10:**

**Which of the following method is static and synchronized in JDBC API?**

- a. getConnection( )
- b. prepareCall( )
- c. executeUpdate( )
- d. executeQuery( )

**Correct Answer: a**

**Detailed Solution:**

The `getConnection()` method is the static and synchronized method provided by the JDBC API.

The `prepareCall()`, `executeUpdate()`, and `executeQuery()` methods are not static or synchronized methods in JDBC API.

---



## OBJECT ORIENTED PROGRAMMING WITH JAVA

### Assignment12

**TYPE OF QUESTION: MCQ**

**Number of questions: 10**

**Total mark:  $10 \times 1 = 10$**

---

#### **QUESTION 1:**

**Which statement is incorrect in case of using “this” keyword in a static method?**

- a. “this” keyword can be used in static method to access static variables only
- b. “this” keyword first needs to be defined by user
- c. “this” keyword cannot be used as a variable name
- d. “this” keyword can not be used in static method to access static variables only

**Correct Answer: b, d**

**Detailed Solution:** The “this” keyword can be used in a static method to access static variables only. It is a pre-defined keyword and hence cannot be used as a variable name.

---

#### **QUESTION 2:**

**State whether the following statements are True or False.**

- i) A catch can not have comma-separated multiple arguments.
- ii) Throwing an Exception always causes program termination.

- a. True, False
- b. False, True
- c. True, True
- d. False, False

**Correct Answer: a**

**Detailed Solution:** A catch statement can never have multiple comma-separated arguments and throwing an exception does not mean program termination, instead it offers the developer to decide what to do when an exception occurs.

---



### **QUESTION 3:**

**Which of the following contains only date and not time?**

- a. java.io.date
- b. java.sql.date
- c. java.util.date
- d. java.util.dateTime

**Answer: b**

Explanation: java.util.date contains both date and time. Whereas, java.sql.date contains only date.

---

### **QUESTION 4:**

**Why the applets are depreciated?**

- a. Applet are complicated to program
- b. Applet had severe security issues
- c. Applet was replaced by AWT
- d. Applet was resource intensive

**Correct Answer: b**

**Detailed Solution:**

Applets are executed in browsers and hence pose severe security issues to the host.

---

### **QUESTION 5:**

**Which of the following control expressions are valid for an if statement?**

- a. Any integer expression.
- b. 0 and 1 as integer.
- c. A String object.
- d. Any Boolean expression.

**Correct Answer: d**

**Detailed Solution:**

In Java *if* accepts only boolean expression.

---



### **QUESTION 6:**

Consider the following program:

```
String animal = "GOAT";
switch(animal){
    break; System.out.println("DOMESTIC");
}
```

What is the output of the Java program given above?

- a. No output
- b. GOAT
- c. DOMESTIC
- d. Compiler error

**Correct Answer: d**

**Explanation:**

Case statements should start with either "case" or "default" only.

---

### **QUESTION 7:**

Consider the following program:

```
public class Question
{
    public static void main(String[] args) {
        String str = "january java nptel.";

        System.out.println(str.charAt(7)+str.substring(9,
14));
    }
}
```



**What is the output of the following program?**

- a. java
- b. ava
- c. y java
- d. ava n

**Correct Answer: d**

**Detailed Solution:** The substring method is used to get a part of the string as per the range parameters.

---

### **QUESTION 8:**

**Which of the following are correct statement for array declaration?**

- a. float[] = new float(3);
- b. float f2[] = new float[];
- c. float[] f1 = new float[3];
- d. float f3[] = new float[3];

**Correct Answer: c, d**

**Detailed Solution:**

Option (c) and (d) are syntactically correct for declaration of an array whereas (a), (b) will cause error.

---

### **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 ");  
} finally {  
    System.out.print("finally ");  
}  
  
System.out.print("finished ");  
}  
}
```

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

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

**Correct Answer: b**

**Detailed Solution:**

The program is syntactically correct and here for two try blocks.

---

**QUESTION 10:**

**Which is a component in AWT that can contain another components like buttons, textfields, labels etc.?**

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

**Correct Answer: c**

**Detailed Solution:**

The Container is a component in AWT that can contain another components like buttons, textfields, labels etc. The classes that extends Container class are known as container such as Frame, Dialog and Panel.

---



## PROGRAMMING IN JAVA

### Assignment 1

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark:  $10 \times 1 = 10$

---

#### **QUESTION 1:**

Which of the following is not a Language Processor?

- a. Assembler
- b. Compiler
- c. Interpreter
- d. Fortran

**Correct Answer: d**

#### **Detailed Solution:**

A computer understands instructions in machine code i.e., in the form of 0s and 1s. Special translators are required for this operation like Assembler, Compiler and Interpreter. Fortran is a programming language but not a language processor.

---

#### **QUESTION 2:**

Which of the following is not a valid comment?

- a. /\*\* comment \*/
- b. /\* comment \*/
- c. /\* comment
- d. // comment

**Correct Answer: c**

#### **Detailed Solution:**

Option c : /\* comment .

This is not valid comment statement

---



---

**QUESTION 3:**

**Consider the following program.**

```
public class Question{
    public static void main(String args[]){
        for(int a=2;a<3;a+=1){
            System.out.print(a++ + a);
        }
    }
}
```

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

- a. 5
- b. 2
- c. 4
- d. 1

**Correct Answer: a**

---

**QUESTION 4:**

**Which of the following can be used for a variable name in Java?**

- a. boolean
- b. final
- c. finally
- d. calloc

**Correct Answer: d**

**Detailed Solution:**

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

---



### **QUESTION 5:**

Consider the following program.

```
public class Question1{  
    public static void main(String args[]){  
        int arr[]={0,1,2,3,4,5,6,7};  
        for(int b=5;b>2;b-=2){  
            System.out.println(arr[--b]);  
        }  
    }  
}
```

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

- a. 4
- b. 2
- c. 3
- d. 5

**Correct Answer: a**

### **QUESTION 6:**

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

```
public class Question3{  
    public static void main(String args[]){  
        char nptel[]={S,W,A,Y,A,M};  
        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 second and the last characters in the array nptel.

- a. nptel[nptel.length-1] + nptel[1]
- b. nptel[1] + nptel[nptel.length-1]



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

**Correct Answer: c**

### **QUESTION 7:**

**What is the output of this program?**

```
public class Question {  
    public static void main(String args[])  
    {  
        int i = 7;  
        System.out.print(--i * 7);  
    }  
}
```

- a. 20
- b. 25
- c. 42
- d. 31

**Correct Answer: c**

#### **Detailed Solution:**

First the value of i will be decremented and then multiplication is performed and the result will be printed.

### **QUESTION 8:**

**Which of the following is used to find and fix bugs in the Java programs?**

- a. JVM
- b. JRE
- c. JDK



d. JDB

**Correct Answer: d**

**Detailed Solution:**

The Java Debugger (JDB or jdb) is a command-line java debugger that debugs the java class.

**QUESTION 9:**

**Which of the following is/are primitive data type(s) in Java?**

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

**Correct Answer: a,d**

**Detailed Solution:**

A String in Java is actually a non-primitive data type, because it refers to an object.

Array is also a non-primitive datatype.

**QUESTION 10:**

**When you compile a program written in the Java programming language, the compiler converts the human-readable source file into platform-independent code that a Java Virtual Machine can understand. What is this platform-independent code called?**

- a. Source code
- b. Bytecode
- c. Machinecode
- d. Opcode

**Correct Answer: b**

**Detailed Solution:**

Byte code is an intermediate code between source code and machine code that is executed by an interpreter such as JVM. e.g., Java class files.



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\*\*\*\*\*



## PROGRAMMING IN JAVA

### Assignment2

**TYPE OF QUESTION: MCQ**

**Number of questions:** 10

**Total mark:**  $10 \times 1 = 10$

---

#### **QUESTION 1:**

**What is the output of the following program?**

```
public class Main{  
    public static void main(String args[]){  
        char a = '8';  
        int b=010;  
        System.out.println(a+b);  
    }  
}
```

- a. 88
- b. 8010
- c. 64
- d. 810

**Correct Answer: c**

**Detailed Solution:**

The argument will take the + operator as the arithmetic addition on the ASCII values instead of characters.

---

#### **QUESTION 2:**

**Which of the following is generate API documentation in HTML format from Java source code?**

- a. javac
- b. javadoc
- c. javap
- d. java



**Correct Answer: b**

**Detailed Solution:**

javacdoc is generate API documentation in HTML format from Java source code.

---

**QUESTION 3:**

Following is a program given for this question.

```
public class Main{
    public static void main(String[] args) {
        char[] copyFrom = { 'j', 'a', 'n', 'n', 'p', 't',
        'e', 'l', 'j', 'a', 'v', 'a', };
        char[] copyTo = new char[9];

        System.arraycopy(copyFrom, 3, copyTo, 0, 9);
    }
}
```

What will be the output of the above program?

- a. javanptel
- b. npteljava
- c. janjananptel
- d. jannpteljava

**Correct Answer: b**

**Detailed Solution:**

---

**QUESTION 4:**

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

```
public class Question {
    public static void main (String[] args) {
        for (String s: args) {
            System.out.println(s+args[0]);
        }
    }
}
```



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

*Input:*

A: "jan java nptel"

B: 1 2 3

- a. A : jannptel  
javanptel  
nptelnptel
- b. A : jan java nptel jan java nptel
- c. B : 11  
21  
31
- d. B : 1 2 3 1

**Correct Answer: b, c**

**Detailed Solution:**

Java interpreted as a single argument, if the command line input is enclosing within quotation marks.

---

#### **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. print() prints and then appends a line break.
- c. println() prints in a single line only and multiple lines cannot be printed.
- d. println() prints and then appends a line break.

**Correct Answer: d**

**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:**

**What was the initial name of Java when it was first developed for embedded systems?**



- a. Greentalk
- b. Oak
- c. Java
- d. Javac

**Correct Answer: a**

**Detailed Solution:**

Java was called "**Greentalk**" by James Gosling and the file extension was .gt and after that java was called **Oak** and was developed as a part of the Green project.

---

**QUESTION 7:**

Which of the following is a valid declaration of an object of class, say Foo?

- a. Foo obj = new Foo;
- b. obj = new Foo();
- c. Foo obj = new Foo();
- d. new Foo obj;

**Correct Answer: c**

**Detailed Solution:**

Others are invalid declarations.

---

**QUESTION 8:**

Following is a program given for this question.

```
public class Question
{
    public static void main(String[] args) {
        boolean m=Integer.valueOf(0).equals(Long.valueOf(1));
        System.out.println(m);
    }
}
```

What will be the output of the above program?

- a. 0
- b. 1



- c. false
- d. true

**Correct Answer: c**

**Detailed Solution:**

The two objects (the Integer and the Long) have different types.

---

**QUESTION 9:**

**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 10:**

**What is the output of the following program?**

```
public class Question
{
    public static void main(String[] args) {

        int i = 10;
        int n = i++%2;
        int m = ++i%7;
        System.out.println(i+n+m);
    }
}
```



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- a. 14
- b. 12
- c. 15
- d. 17

**Correct Answer: d**

---

\*\*\*\*\*



## PROGRAMMING IN JAVA

### Assignment3

**TYPE OF QUESTION: MCQ**

**Number of questions:10**

**Total mark:  $10 \times 1 = 10$**

---

#### **QUESTION 1:**

**Consider the following piece of code in Java.**

```
class A {  
    public int i;  
    protected int j;  
}  
class B extends A  
{  
    void display()  
    {  
        super.j = super.j-super.i ;  
        System.out.println(super.i + " " + super.j);  
    }  
}  
public class inheritance  
{  
    public static void main(String args[])  
    {  
        B obj = new B();  
        obj.i=3;  
        obj.j=6;  
        obj.display();  
    }  
}
```

**What is the output of the above program?**

- a. 2 3
- b. 3 3
- c. Runtime Error
- d. Compilation Error

**Answer: b**

**Explanation:** The java super keyword is used to refer the immediate parent class object.



---

### **QUESTION 2:**

**Consider the following piece of code in Java.**

```
public class Question
{
    public static int x = 7;
    public static void main(String[] args) {
        Question a = new Question ();
        Question b = new Question ();
        a.x = 2;
        b.x = 2;
        System.out.println(a.x+b.x+Question.x);
    }
}
```

**What is the output of the above program?**

- a) 6
- b) 10
- c) 21
- d) error

**Correct Answer: a**

**Detailed Solution:**

Because x is defined as a public static int in the class Question, every reference to x will have the value that was last assigned because x is a static variable (and therefore a class variable) shared across all instances of the class. That is, there is only one x: when the value of x changes in any instance it affects the value of x for all instances of Question.

---



---

### **QUESTION 3:**

**If a class inheriting an abstract class does not define all of its functions then it will be known as?**

- a) Default
- b) Abstract
- c) A simple class
- d) Static class

**Answer: b**

**Explanation:** Any subclass of an abstract class must either implement all of the abstract methods in the superclass or be itself declared abstract.

---

### **QUESTION 4:**

**Which among the following best describes polymorphism?**

- a) It is the ability for many messages/data to be processed in one way
- b) It is the ability for a message/data to be processed in only 1 form
- c) It is the ability for a message/data to be processed in more than one form
- d) It is the ability for undefined message/data to be processed in at least one way

**Correct Answer: c**

**Detailed Solution:** It is actually the ability for a message/data to be processed in more than one form. The word polymorphism indicates many-forms. So if a single entity takes more than one form, it is known as polymorphism.

---



### **QUESTION 5:**

**Consider the following piece of code in Java**

```
class Men
{
    int walkingDistance(int weight)
    {
        System.out.println(10);
        return 10;
    }
}
class WildMen extends Men
{
    void walkingDistance(int weight)
    {
        System.out.println("20");
    }
}
public class MethodOverriding3
{
    public static void main(String[] args)
    {
        WildMen wc = new WildMen();
        wc.walkingDistance(30);
    }
}
```

**What is the output of the above program?**

- a. 30
- b. 20
- c. Compiler error
- d. Runtime error

**Correct Answer: c**

**Detailed Solution:** If the argument list is the same, the return types can not be incompatible types. So, the compiler reports an error "The return type is incompatible with Cat.jumpingHeight(int)".

---

### **QUESTION 6:**



---

**All the variables of the interface should be?**

- a) default and final
- b) default and static
- c) public, static and final
- d) protect, static and final

**Answer: c**

**Explanation:** Variables of an interface are public, static, and final by default because the interfaces cannot be instantiated, final ensures the value assigned cannot be changed with the implementing class and public for it to be accessible by all the implementing classes.

---

**QUESTION 7:**

**Disadvantage(s) of inheritance in Java programming is/are**

- a) Code readability
- b) two classes (base and inherited class) get tightly coupled
- c) Code maintainability
- d) Code reusability

**Correct Answer: b**

**Explanation:**

The main advantages of inheritance are code reusability and readability. When child class inherits the properties and functionality of parent class, we need not write the same code again in child class. This makes it easier to reuse the code, makes us write the less code and the code becomes much more readable.

The main disadvantage of using inheritance is that the two classes (base and inherited class) get tightly coupled. This means one cannot be used independently of each other. Also with time, during maintenance adding new features both base as well as derived classes are required to be changed.

---

**QUESTION 8:**



---

**When does method overloading is determined?**

- a) At run time
- b) At coding time
- c) At compile time
- d) At execution time

**Answer: c**

**Explanation:** Overloading is determined at compile time. Hence, it is also known as compile time polymorphism.

---

**QUESTION 9:**

```
public class Test1{
    Test1() {
        Test1 obj1 = new Test1();
    }

    public static void main(String []args) {
        Test1 obj = new Test1();
        System.out.println("Hello");
    }
}
```

**Which of the following statements is/ are true?**

- a. Output : Hello
- b. Program will compile successfully.
- c. There will be a compile-time error.
- d. The program will give a runtime error.

**Correct Answer: b, d**

**Detailed Solution:**

Constructor if you defined recursively, then it will show runtime error.

---



---

**QUESTION 10:**

**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. Common behavior can be defined in a **superclass** and inherited into a **subclass** using the **extends** keyword.
- C. The term "class variable" is another name for **static field**.
- d. A local variable stores temporary state; it is declared inside a **method**.

**Correct Answer: a,b,c,d**

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

---



## PROGRAMMING IN JAVA

### Assignment4

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark:  $10 \times 1 = 10$

---

#### **QUESTION 1:**

Which of the following statement(s) is/are 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. Runnable is a class present in java.lang package.
- d. Thread is a class present in java.lang package.

Correct Answer: a,b,d

#### Detailed Solution:

Runnable is an interface in java.lang package.

---

#### **QUESTION 2:**

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

- a. With the import statement, generally import only a single package member or an entire package.
- b. To import all the types contained in a particular package, use the import statement with the asterisk (\*) wildcard character.  
`import package.*;`
- c. `import package.A*;` it used to match a subset of the classes in a package starts with "A".
- d. `import package.A*;` it generates compilation error.

Correct Answer: c

#### Detailed Solution:

`import package.A*;` it generates compilation error.



**QUESTION 3:**

Which of the following is/are class(s) of `java.awt` package?

- a. CardLayout
- b. Checkbox
- c. Choice
- d. MenuContainer

**Correct Answer: a,b,c**

**Detailed Solution:**

MenuContainer is an interface of java.awt package, all others are class.

---

**QUESTION 4:**

Which of these access specifier(s) can be used for an interface?

- a. public
- b. protected
- c. private
- d. Both b and c

**Correct Answer: a**

**Detailed Solution:**

---



### **QUESTION 5:**

Consider the program given below.

```
import static java.lang.Math.*;  
  
public class Main{  
  
    public static void main(String args[]){  
  
        System.out.println(cos(3*PI));  
  
    }  
  
}
```

**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. -1.0
- d. 3.14

**Correct Answer: c**

**Detailed Solution:**

**Test by run.**

The static import statement is used to import the static members(e.g. ,PI) of java.lang.Math.

```
import static java.lang.Math.*;
```

---

### **QUESTION 6:**

**Which of the following packages is used to includes utility classes like Calendar, Collections, Date?**

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

**Correct Answer: b**

**Detailed Solution:**



---

java.util is used to includes utility classes like Calendar, Collection, Date.

---

### **QUESTION 7:**

Consider the program given below.

```
import static java.lang.System.*;
public class Question{
    public static void main(String args[])
    {
        out.println("JAVA");
    }
}
```

**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. JAVA
- d. JAV

**Correct Answer: c**

**Detailed Solution:**

---

### **QUESTION 8:**

**Which of the following is/are NOT valid declaration(s) of an interface?**

- a. public interface Question {  
 void method(int value) {  
 System.out.println("Nptel");  
 }  
}
- b. public interface Question {  
 void method(int value) {



```
}
```

c. public interface Question {  
}  
  
d. public interface Question {  
 default void method(int value) {  
 System.out.println("Nptel");  
 }  
}

**Correct Answer: a**

**Detailed Solution:**

In option a , It has a method implementation in it. Only default and static methods have implementations. So option a is not a valid interface. All others are valid.

---

### **QUESTION 9:**

**Which of the following is false statement about interface in java?**

- a. An interface can extend other interfaces.
- b. The interface body can contain abstract methods, default methods, and static methods.
- c. All constant values defined in an interface are implicitly public, static, and final.
- d. A static method in an interface are implicitly private.

**Correct Answer: d**

**Detailed Solution:**

static methods in an interface are implicitly public. So you can omit the public modifier.

---

### **QUESTION 10:**

**Which of the following statement(s) is/are 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. Cloneable is an interface in java.lang package.



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- 
- d. Thread is a class present in java.lang package.

**Correct Answer: a,b,c,d**

**Detailed Solution:**

All statements are true.

---

\*\*\*\*\*END\*\*\*\*\*



## PROGRAMMING IN JAVA

### Assignment 5

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark: 10 X 1 = 10

---

#### **QUESTION 1:**

Which of the following is **not true** about **throw**

- a. Throw is used inside a function
- b. Throw can be used to declare multiple exception
- c. Throw is followed by an instance.
- d. Throw is a keyword

**Correct Answer: b**

#### **Detailed Solution:**

Throw keyword is used to throw an exception explicitly. It can throw only one exception at a time.

---

#### **QUESTION 2:**

Which of the following is not true about custom exception in java?

- a. class Exception extends Exp {  
    public Exception () {super () ;}  
    public Exception (String s) {super(s);} }
- b. class Exception extends Exp{  
    Exception(String s){  
        super(s);  
    }  
}
- c. public class Exception extends Exp {  
    public Exception(String s) {  
        super(s);  
    }  
}
- d. class Exception extends Exp {  
    public Exception () {super () ;}



}

**Correct Answer: d**

**Detailed Solution:**

In a custom exception, the user will provide the message which needs to be used as an argument in the Exception () method. Hence, option (d) has no way to provide a custom exception.

---

**QUESTION 3:**

Which of the following is not a property of tagged interface?

- a. Serializable
- b. Cloneable
- c. Remote
- d. Cascading

**Correct Answer: d**

**Detailed Solution:**

Built-in marker or tagged interfaces are Serializable, Cloneable, and Remote.

---

**QUESTION 4:**

Which of the following is not an exception in Java?

- a. SQLException
- b. ArrayIndexOutOfBoundsException
- c. OutOfMemoryError
- d. StackOverflow

**Correct Answer: d**

**Detailed Solution:**

StackOverflow is not a valid exception in Java; instead StackOverflowError is thrown when a stack overflow occurs because an application recurses too deeply.

---

**QUESTION 5:**

Which of the following is type of Java Exception?

- a. unchecked



- 
- b. checked
  - c. a & b
  - d. error

**Correct Answer: c**

**Detailed Solution:**

In java exception, there are two types of exception. Those are checked exception and unchecked exception.

---

**QUESTION 6:**

Which of the following keywords is not a part of exception handling?

- a. try
- b. throws
- c. throw
- d. thrown

**Correct Answer: d**

**Detailed Solution:**

Exceptional handling have 5 keywords – try, catch, throws, throw and finally.

---

**QUESTION 7:**

Which of the option is correct regarding multiple catch blocks?

- a. The subclass exception cannot be caught at first.
- b. The superclass exception cannot be caught at first.
- c. The subclass exception must be caught at last.
- d. The superclass exception must be caught at first.

**Correct Answer: b**

**Detailed Solution:**

The superclass exception cannot be caught at first else subclass exceptions will not be executed, which will result in an error.

---

**QUESTION 8:**



---

When an array element is accessed beyond the array size, then which exception occurs

- a. ArrayElementOutOfBound
- b. ArrayIndexOutOfBound
- c. ArraySizeOutOfBound
- d. None of the above

**Correct Answer: d**

**Detailed Solution:**

Array element is accessed beyond the array size then `ArrayIndexOutOfBoundsException` occurs.

---

### **QUESTION 9:**

What is the output of this program?

```
class ExceptionHandling{
    public static void main(String args[ ]) {
        try{
            int num1, num2;
            num1=5;
            num2=num1/0;
            System.out.print("A");
        }
        catch(ArithmaticException e) {
            System.out.print("0");
        }
        finally {
            System.out.print("B");
        }
    }
}
```

- a. 0
- b. A
- c. 0
- d. 0B

**Correct Answer: d**

**Detailed Solution:**



---

There will be a divide-by-zero error in the statement `num2 = num1/0;` and as a consequence it will throw an exception object of type `ArithmaticException` 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 10:**

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.

---

\*\*\*\*\*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. public void run()
- b. public void exit()
- c. public void start()
- d. public final int getPriority()

**Correct Answer: b**

**Detailed Solution:**

The `java.lang.System.exit()` method terminates the currently running Java Virtual Machine. It is a status code where a nonzero or 1 indicates abnormal termination of the program whereas zero or 0 indicates normal termination of the program. It is not included in the thread class as it is not the part of the execution cycle of the method.

---

#### **QUESTION 2:**

**What is difference between starting thread with run() and start() method?**

- a. There is no difference
- b. When you call `start()` method, main thread internally calls `run()` method to start newly created Thread
- c. `run()` calls `start()` method internally
- d. None

**Correct Answer: b**

**Explanation:**

Main **difference** is that when program calls **start() method** a new **Thread** is created and code inside **run() method** is executed in new **Thread** while if you call **run() method** directly no new **Thread** is created and code inside **run()** will execute on current **Thread**.

---



### **QUESTION 3:**

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

- By implementing the Runnable interface.
- By extending the Thread class.
- By creating a new class named Thread and calling method run().
- 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:**

**What is the output of the following program?**

```
public class Question
{
    public static void main(String[] args) {

        try {
            int a=5/0;
            System.out.print("a ");
        } catch (ArithmaticException ae) {

            System.out.print("ArithmaticException ");
        } catch (Exception e) {
            System.out.print(" Exception ");
        }
        System.out.print("Hello World");
    }
}
```



- a. Hello World
- b. ArithmeticException
- c. ArithmeticException Exception Hello World
- d. ArithmeticException Hello World

**Correct Answer: c**

**Detailed Solution:** ArithmeticException is an unchecked exception in Java that occurs due to an exceptional arithmetic condition. This generally indicates that a mathematical error has occurred at run-time which can't be dealt with, for example, when an integer is divided by zero.

Since here devide by zero is already catched by Arithmatic exception so catch Exception block will not execute.

---

#### **QUESTION 5:**

**Which method restarts a dead thread**

- a. start()
- b. restart()
- c. restartThread()
- d. none

**Correct Answer: d**

**Detailed Solution:** Thread can not be restarted you have to create a new Thread everytime. A thread is born, started, runs, and then dies. Once a thread enters dead state it cannot be restarted.

---

#### **QUESTION 6:**

**Assume the following method is properly synchronized and called from a thread A on an object B: wait(2000); After calling this method, when will the thread A become a candidate to get another turn at the CPU?**

- a) After thread A is notified, or after two seconds.
- b) Two seconds after thread A is notified.
- c) After the lock on B is released, or after two seconds.
- d) Two seconds after lock B is released.

**Answer : a**



**Explanation:** Either of the two events (notification or wait time expiration) will make the thread become a candidate for running again

---

### **QUESTION 7:**

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

```
public class Question extends Thread{
    public void run(){
        for(int i=1;i<5;i++) {

            System.out.println(++i);
        }
    }
    public static void main(String args[]){
        Question t1=new Question();
        t1.run();

    }
}
```

**What is the output of the above program?**

- a. 1  
    3
- b. 1  
    2  
    3  
    4
- c. Runtime error
- d. 2  
    4

**Correct Answer: d**

**Detailed Solution:**

---



### **QUESTION 8:**

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

```
public class Main{  
    public static void main(String[] args){  
        Thread thread=Thread.currentThread();  
        System.out.print(thread.activeCount());  
        thread.run();  
        System.out.print(thread.activeCount());  
    }  
}
```

- a. 01
- b. False True
- c. True True
- d. 11

**Correct Answer: d**

**Detailed Solution:**

**java.lang.Thread.activeCount()** : Returns an estimate of the number of active threads in the current thread's thread group and its subgroups.

---

### **QUESTION 9:**

**Which of the following is/are not 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: b,c,d**

**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 keywords is not a part of exception handling?**

- a) try
- b) finally
- c) thrown
- d) catch

**Answer: a,b,d**

**Explanation:** Exceptional handling is managed via 5 keywords – try, catch, throws, throw and finally.

---

\*\*\*\*\*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:**

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:** c

#### **Detailed Solution:**

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



**QUESTION 3:**

```
import java.io.*;  
  
public class Question {  
    public static void main(String[] args)  
    {  
        try {  
  
            PrintWriter writer = new PrintWriter(System.out);  
  
            writer.write(9+97);  
  
            writer.close();  
        }  
        catch (Exception e) {  
            System.out.println(e);  
        }  
    }  
}
```

**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. j
- d. 106

**Correct Answer: c**

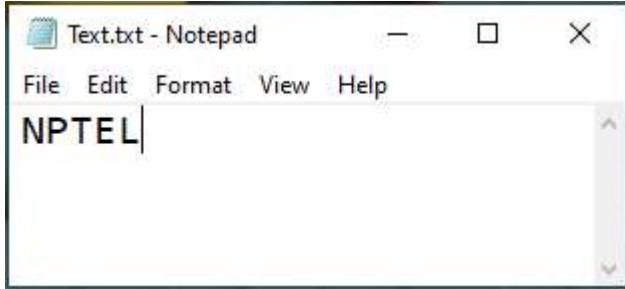
**Detailed Solution:**



#### **QUESTION 4:**

```
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 5:**

**Which method is used to write an array of byte to the current output stream?**



- 
- a. public void write(int b) throws IOException
  - b. public void write(byte[ ] b) throws IOException
  - c. public void flush( ) throws IOException
  - d. public void close( ) throws IOException

**Correct Answer: b**

**Detailed Solution:**

public void write(byte[ ] b) throws IOException is used to write an array of byte to the current output stream.

---

**QUESTION 6:**

**Which of the following is/are Standard Stream(s)?**

- a. System.in
- b. System.out
- c. System.err
- d. System.console

**Correct Answer: a,b,c**

**Detailed Solution:**

The Java platform supports three Standard Streams: Standard Input, accessed through System.in; Standard Output, accessed through System.out; and Standard Error, accessed through System.err.

---

**QUESTION 7:**

**Which of the following method in java.io package help in clearing the contents of the buffer?**

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

**Correct Answer: a**



**Detailed Solution:**

flush() : Flushes the stream.

Note: Clear( ) and exit( ) are not any valid methods defined in any class in java.io package.

---

**QUESTION 8:**

**Which method of RandomAccessFile class reads a line from the file and returns it as a String ?**

- a. WriteInt( ).
- b. readLine( )
- c. readInt( )
- d. WriteDouble( )

**Correct Answer:b**

**Detailed Solution:**

readLine() : Reads the next line of text from this file and return it as a String.

---

**QUESTION 9:**

**Which of the following is/are interface(s) of java.io package?**

- a. FileReader
- b. ObjectInput
- c. ObjectOutput
- d. DataInput

**Correct Answer: b,c,d**

**Detailed Solution:**

FileReader is a class in java.io package. All others are interface.

---

**QUESTION 10:**

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



- a. DataStreams detects an end-of-file condition by using EOFException, instead of testing for an invalid return value.
- b. DataStreams uses floating point numbers to represent monetary values.
- c. Data streams support I/O of primitive data types.
- d. Object streams support I/O of objects.

**Correct Answer: a,b,c,d**

**Detailed Solution:**

All options are correct.

DataStreams detects an end-of-file condition by catching EOFException, instead of testing for an invalid return value.

---



## PROGRAMMING IN JAVA

### Assignment8

**TYPE OF QUESTION: MCQ**

**Number of questions: 10**

**Total mark:  $10 \times 1 = 10$**

---

#### **QUESTION 1:**

Which of the following is **NOT** a class of **java.awt package?**

- a. Button
- b. Component
- c. Dialog
- d. Paint

**Correct Answer: d**

#### **Detailed Solution:**

Paint is the interface of the **java.awt package**.

---

#### **QUESTION 2:**

Which of the following is/are **NOT** an exception of **java.awt package?**

- a. AWTError
- b. AWTException
- c. FontFormatException
- d. all of these

**Correct Answer: a**

#### **Detailed Solution:**

AWTError is error of **java.awt package**.

---

#### **QUESTION 3:**

Which of the following method is/are a class button of **java.awt package** ?



- a. paint(Graphics g)
- b. setLabel(String label)
- c. getCurrent()
- d. getItem(int index)

**Correct Answer: b**

**Detailed Solution:**

setLabel(String label) method Changes this button's label to be the String argument.

---

**QUESTION 4:**

**Which of the following container does not contain titlebar and menubar ?**

- a. window
- b. panel
- c. container
- d. frame

**Correct Answer: b**

**Detailed Solution:**

Panel does not contain titlebar and menubar.

---

**QUESTION 5:**

**Which package provides many event classes and Listener interfaces for event handling?**

- a. java.awt.activeevent
- b. java.awt.event
- c. java.awt.listener
- d. none of these

**Correct Answer: b**

**Detailed Solution:**

The class Event is declared in java.awt.event package which is used for event classes and Listener interfaces for event handling.

---



### **QUESTION 6:**

**What is the name of the method used to get the current font of an graphic in java.awt.graphics?**

- a. abstract FontMetrics getFontMetrics(Font f)
- b. abstract Font getFont()
- c. FontMetrics getFontMetrics()
- d. None of these

**Correct Answer: b**

#### **Detailed Solution:**

abstract Font getFont() method of graphics class get the current font of the graphics when it is occurred.

---

### **QUESTION 7:**

**Which of the following method remove all items from scrolling list in java.awt.list?**

- a. hide()
- b. clear()
- c. remove()
- d. None

**Correct Answer: b**

#### **Detailed Solution:**

clear() in java.awt.list is used for remove all items from scrolling list.

---

### **QUESTION 8:**

**Which of the following statement is true about the update() in java.awt package?**

- a. Sets the color of the graphics context to be the foreground color of this component.
- b. Calls this component's paint method to completely redraw this component.
- c. Clears this component by filling it with the background color.
- d. All of these.

**Correct Answer: d**



**Detailed Solution:**

update() perform all of these in java.awt package.

---

**QUESTION 9:**

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

- a. dimension()
- b. setSize()
- c. area()
- d. size()
- e. resize()

**Correct Answer: d**

**Detailed Solution:**

`size()` can be used to return the current size of a component.

---

**QUESTION 10:**

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

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

**Correct Answer: c**

**Detailed Solution:**

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

---



## PROGRAMMING IN JAVA

### Assignment9

**TYPE OF QUESTION: MCQ**

**Number of questions: 10**

**Total mark:  $10 \times 1 = 10$**

---

#### **QUESTION 1:**

Select the correct statement(s) in the following.

- a. JTextField cannot be used as an alternative to JLabel.
- b. JLabel cannot be used as an alternative to JTextField.
- c. Button grouped radio button can be used as an alternative to JComboBox.
- d. The class JPasswordField extends the class JLabel.

**Correct Answer: b,c**

#### **Detailed Solution:**

- a) **False:** Setting JTextField property 'setEditble=False'; it can be used as a label.
  - b) **True:** Label cannot be used to input data (it is never editble).
  - c) **True:** In a button grouped radio button, only one item can be selected similar to JComboBox. So, they can be used interchangeably.
  - d) **False:** JPasswordField extends JTextField.
- 

#### **QUESTION 2:**

In Java AWT, TextArea and TextField are subclass of:

- a. List.
- b. Label.
- c. TextComponent.
- d. TextComponent and Label, respectively.

**Correct Answer: c**

**Detailed Solution:** TextArea and TextField are the two sub classes of TextComponent in Java AWT.

---



### **QUESTION 3:**

Analyze the following code.

```
import java.awt.*;
import javax.swing.*;
public class Test {
    public static void main(String[ ] args) {
        JFrame frame = new JFrame("My Frame");
        frame.add(new JButton("Cancel"));
        frame.add(new JButton("OK "));
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setSize(200, 200);
        frame.setVisible(true);
    }
}
```

Which button will be displayed(or can be seen by user)?

- a. OK
- b. Cancel
- c. both
- d. None

**Correct Answer: a**

#### **Detailed Solution:**

By default, the layout of the content pane in a JFrame is BorderLayout. Button Cancel is placed in the center of content pane, then button OK is placed in the same place. So you only can see button OK.

---

### **QUESTION 4:**

**In JLabel(Icon, int) method/constructor, the int argument specifies the horizontal alignment of the label's contents within its drawing area.**

**Which of the following is/are not a valid constants for horizontal alignment?**

- a. RIGHT
- b. LEADING
- c. TRAILING
- d. TOP

**Correct Answer: d**

#### **Detailed Solution:**

TOP is not a valid constant for horizontal alignment.



## **QUESTION 5:**

**Which of the following is/ are not related with keyboard event?**

- a. Class KeyEvent is used to notify if any key pressed occurs or not.
  - b. The KeyListener should be added either in init() or the main method.
  - c. RequestFocus should be added either in init() or the main method.
  - d. The class InputEvent should be imported explicitly in the program.

**Correct Answer: d**

### Detailed Solution:

The `InputEvent` class is the super class of all the sub classes dealing with events from different sources. When, we import `java.awt.*`, we import it automatically. No need to import it explicitly.

## **QUESTION 6:**

**Which of the following Listener(s) is/are supported by button (Swing component)?**

- a. ActionListener
  - b. ChangeListener
  - c. ItemListener
  - d. WindowListener

**Correct Answer: a,b,c**

### **Detailed Solution:**

Except WindowListner, all other Listeners supported by button component.

This table lists Swing components with their specialized listeners.



### **QUESTION 7:**

**Which of the following Listener Interface does not have an Adapter Class?**

- a. ActionListener
- b. ChangeListener
- c. ComponentListener
- d. ItemListener

**Correct Answer: a,b,d**

#### **Detailed Solution:**

Only ComponentListener is having an Adapter class *ComponentAdapter* (among the options).

ActionListener,changeListener,ItemListener doesn't have an Adapter class hence a,b,d is right answer.

---

### **QUESTION 8:**

To set a FlowLayout in a panel, say jp, which of the following method(s) that you can not use?

- a. jp.setLayout(new FlowLayout());
- b. jp.setLayout(new FlowLayout(FlowLayout.CENTER));
- c. jp.setLayout(new FlowLayout(FlowLayout.CENTER));
- d. jp.setLayout(FlowLayout());

**Correct Answer: c, d**

#### **Detailed Solution:**

(c) and (d) are not valid according to the syntax.

---

### **QUESTION 9:**

**Which of the following is/are interface(s) in javax.swing package?**

- a. MenuElement
- b. BoxLayout
- c. JComponent
- d. Scrollable

**Correct Answer: a, d**

#### **Detailed Solution:**

MenuElement:

Any component that can be placed into a menu should implement this interface.



Scrollable:

An interface that provides information to a scrolling container like JScrollPane.

All others are Class.

---

**QUESTION 10:**

**Which package 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.

---

\*\*\*\*\*END\*\*\*\*\*



## PROGRAMMING IN JAVA

### Assignment10

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark:  $10 \times 1 = 10$

---

#### **QUESTION 1:**

**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:**

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

---

#### **QUESTION 2:**

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

- a. DatagramSocket is a UDP endpoint API .
- b. DatagramSocket is a TCP server API .
- c. ServerSocket is a TCP server API.
- d. ServerSocket is a TCP client API.

**Correct Answer: b,d**

**Detailed Solution:**

ServerSocket is a TCP server API, and will typically accept connections from client sockets. DatagramSocket is a UDP endpoint API and is used to send and receive datagram packets.

---

#### **QUESTION 3:**



---

**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 4:**

**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 5:**

**In the following URL, identify the Resource name?**

**<https://xyz.ac.in>**

- a. https
- b. xyz.ac.in
- c. ac.in
- d. https://xyz.ac.in

**Correct Answer: b**

**Detailed Solution:**



---

Resource name is xyz.ac.in.

---

**QUESTION 6:**

**Which of the following is/are transport layer protocol(s)?**

- a. TCP
- b. UDP
- c. HTTP
- d. FTP

**Correct Answer: a,b**

**Detailed Solution:**

TCP,UDP are transport layer protocols.

---

**QUESTION 7:**

**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 8:**

**Which of the following is/are valid Data Definition Language (DDL) command(s)?**

- a. SELECT
- b. INSERT
- c. UPDATE
- d. ALTER TABLE



---

**Correct Answer: d**

**Detailed Solution:**

ALTER TABLE is a Data Definition Language (DDL).

---

**QUESTION 9:**

**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 10:**

**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. Connect(string url, string userID, string password).

**Correct Answer: a**

**Detailed Solution:**

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

---

\*\*\*\*\*END\*\*\*\*\*



## OBJECT ORIENTED PROGRAMMING WITH JAVA

### Assignment11

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total mark:  $10 \times 1 = 10$

---

#### **QUESTION 1:**

Which of the following is not a JDBC drivers?

- a. Native – API driver
- b. Thin driver
- c. Network protocol driver
- d. Local Protocol driver

Correct Answer: d

#### Detailed Solution:

There are 4 types of JDBC drivers : JDBC-ODBC bridge driver, network protocol driver, native-API driver and thine driver.

---

#### **QUESTION 2:**

Which of the following is a JDBC class component?

- a. Connection
- b. ResultSet
- c. Statement
- d. Driver

Correct Answer: b

#### Detailed Solution:

ResultSet is a JDBC class component and remaining are JDBC interface components.

---

#### **QUESTION 3:**



---

**As with Statement objects, to execute a PreparedStatement object, it need to be call an execute statement. Which of the following statement(s) is/are true regarding this?**

- a. executeQuery: if the query returns only one ResultSet (such as a SELECT SQL statement).
- b. executeUpdate : if the query does not return a ResultSet (such as an UPDATE SQL statement).
- c. execute : if the query might return more than one ResultSet object.
- d. executupdateQuery : if the query does return a ResultSet (such as an UPDATE SQL statement).

**Correct Answer: a,b,c**

**Detailed Solution:**

All options are correct except option (d).

---

**QUESTION 4:**

**Which of the following statement(s) is/are true, when the return value for executeUpdate is 0 ?**

- a. The statement executed was an update statement that affected zero rows.
- b. The statement executed was a DDL statement.
- c. The statement executed was an update statement that affected one row.
- d. The statement executed was a DCL statement.

**Correct Answer: a, b**

**Detailed Solution:**

Either the statement executed was an update statement that affected zero rows or the statement executed was a DDL statement, when the return value for executeUpdate is 0.

---

**QUESTION 5:**

**Which of the following statement is used for executing a database stored procedure?**

- a. Statement



- 
- b. PreparedStatement
  - c. CallableStatement
  - d. None of these

**Correct Answer:** c

**Detailed Solution:**

CallableStatement in JDBC is used for executing a database stored procedure.

---

**QUESTION 6:**

**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 7:**

**The SQL command “USE test” implies, which of the following?**

- a. List all the databases those are there in the database server.
- b. List all the tables those are there under the database.
- c. Create a table called test.
- d. Set test as the current working database, so that any SQL command bind to the test database only.

**Correct Answer:** d

**Detailed Solution:**

The USE command is used to set the current working database.

---



### **QUESTION 8:**

**What happens after execution of the following code?**

```
import java.sql.*;
class InsertPrepared{
    public static void main(String args[]){
        try{
            Class.forName("com.mysql.jdbc.Driver");
            Connection con=DriverManager.getConnection(
                "jdbc:mysql://localhost/database","Java","july");
            PreparedStatement stmt=con.prepareStatement("INSERT INTO
table VALUES (?, ?)");
            stmt.setInt(1,"Joe");
            stmt.setString(2,"Dan");
            stmt.executeUpdate();
            con.close();
        }
        catch(Exception e){
            System.out.println(e);
        }
    }
}
```

- a. Compilation error
- b. Runtime error
- c. 1, "Joe" is replaced by 2, "Dan"
- d. "Joe" and "Dan" both are inserted in different columns of same row.

**Correct Answer: d**

---

### **QUESTION 9:**

**How do you know in your Java program that a SQL warning is generated as a result of executing a SQL statement in the database?**

- a. You must catch the checked SQLException which is thrown by the method which executes the statement.
- b. You must catch the unchecked SQLWarningException which is thrown by the method which executes the statement.
- c. You must invoke the getWarnings() method on the Statement object (or a sub interface thereof).
- d. You must query the ResultSet object about possible warnings generated by the database.

**Correct Answer: c**

**Detailed Solution:**

The getWarnings() method can return, if the SQL database server returns any error or warning.

---



**QUESTION 10:**

Which one of the following SQL type represent getfloat()?

- a. FLOAT
- b. REAL
- c. INTEGER
- d. DOUBLE

Correct Answer: b

Detailed Solution:

REAL is a SQL type which represent getfloat(), that is a ResultSet method.

---



---

## —OBJECT ORIENTED PROGRAMMING WITH JAVA

### Assignment12

**TYPE OF QUESTION: MCQ**

**Number of questions:** 10

**Total mark:**  $10 \times 1 = 10$

---

#### **QUESTION 1:**

**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 2:**

Which of the following control expressions are not valid for an **if** statement?

- a. Any integer expression.
- b. Any Boolean expression.
- c. A String object.
- d. **Any** expression with mixed arithmetic.

**Correct Answer: c,d**

#### **Detailed Solution:**

Any expression with Boolean or integer variables are valid. The condition will evaluate to zero (false) or no-zero (true) values. Other options are not valid.

---



### **QUESTION 3:**

Let's consider the following program in Java.

```
class Test extends Thread {  
    public void run() {  
        System.out.println("I am from Run...");  
    }  
}  
  
class MyProgram {  
    public static void main(String[] args) {  
        Test t = new Test();  
        t.start();  
    }  
}
```

If you run this program the how many threads will be executed altogether?

- a. One thread only.
- b. Two threads only.
- c. Three threads only.
- d. No thread will run in this case.

**Correct Answer: b**

### **Detailed Solution:**

Here, two thread objects will be in execution: One is the thread due to the execution of the `main()` method and other is the `run()` of the object `t`.

---

### **QUESTION 4:**

**Which of the statements are not 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: a,b,d**

### **Detailed Solution:**

Swing is lightweight compared to the AWT. So only c option is correct all are “**not correct**”. Hence answer will be a,b,d.



---

**QUESTION 5:**

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 6:**

**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. exception finally finished



- d. finally exception finished
- e. Compilation fails

**Correct Answer:d**

**Detailed Solution:**

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

---

**QUESTION 7:**

Consider the following program:

```
public class Question
{
    public static void main(String[] args) {
        String str = "january java nptel.";
        System.out.println(str.charAt(8)+str.substring(9, 12));
    }
}
```

**What is the output of the following program?**

- a. j ava
- b. iava
- c. javanptel
- d. january

**Correct Answer: b**

**Detailed Solution:**

---

**QUESTION 8:**

**Which of the following statements would 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: a,b**

**Detailed Solution:**

Option (c), (d), (e) and (f) are syntactically correct for declaration of an array. And option (a) and (b) are not correct so they will cause error

---

**QUESTION 9:**

Consider the following program:

```
public class Question
{
    public static void main(String[] args) {
        String str = "april java nptel.";
        System.out.println(str.length());
    }
}
```

**What is the output of the following program?**

- a. 16
- b. 15
- c. 19
- d. 17

**Correct Answer: d**

**Detailed Solution:**

---

**QUESTION 10:**

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

- ```
JFrame f = new JFrame();
```
- a. f.setSize(300, 200);



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

**Correct Answer: b**

**Detailed Solution:**

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

---

\*\*\*\*\*END\*\*\*\*\*