What if the main method is declared as private?

The program compiles properly but at runtime it will give "Main method not public." message.

What is meant by pass by reference and pass by value in Java?

Pass by reference means, passing the address itself rather than passing the value. Pass by value means passing a copy of the value.

If you’re overriding the method equals() of an object, which other method you might also consider?

hashCode()

What is Byte Code?

Or

What gives java it’s “write once and run anywhere” nature?

All Java programs are compiled into class files that contain bytecodes. These byte codes can be run in any platform and hence java is said to be platform independent.

Expain the reason for each keyword of public static void main(String args[])?

public- main(..) is the first method called by java environment when a program is executed so it has to accessible from java environment. Hence the access specifier has to be public.

static: Java environment should be able to call this method without creating an instance of the class , so this method must be declared as static.

void: main does not return anything so the return type must be void

The argument String indicates the argument type which is given at the command line and arg is an array for string given during command line.

What are the differences between == and .equals() ?

Or

what is difference between == and equals

Or

Difference between == and equals method

Or

What would you use to compare two String variables - the operator == or the method equals()?

Or

How is it possible for two String objects with identical values not to be equal

under the == operator?

The == operator compares two objects to determine if they are the same object in memory i.e. present in the same memory location. It is possible for two String objects to have the same value, but located in different areas of memory.

== compares references while .equals compares contents. The method public boolean equals(Object obj) is provided by the Object class and can be overridden. The default implementation returns true only if the object is compared with itself, which is equivalent to the equality operator == being used to compare aliases to the object. String, BitSet, Date, and File override the equals() method. For two String objects, value equality means that they contain the same character sequence. For the Wrapper classes, value equality means that the primitive values are equal.

```
 public class EqualsTest {

      public static void main(String[] args) {

            String s1 = "abc";
            String s2 = s1;
            String s5 = "abc";
            String s3 = new String("abc");
            String s4 = new String("abc");
            System.out.println("== comparison : " + (s1 == s5));
            System.out.println("== comparison : " + (s1 == s2));
            System.out.println("Using equals method : " + s1.equals(s2));
            System.out.println("== comparison : " + s3 == s4);
            System.out.println("Using equals method : " + s3.equals(s4));
      }
}
```

Output
```
== comparison : true
== comparison : true
Using equals method : true
false
Using equals method : true
```

What if the static modifier is removed from the signature of the main method?

Or

What if I do not provide the String array as the argument to the method?

Program compiles. But at runtime throws an error "NoSuchMethodError".

Why oracle Type 4 driver is named as oracle thin driver?

Oracle provides a Type 4 JDBC driver, referred to as the Oracle “thin” driver. This driver includes its own implementation of a TCP/IP version of Oracle’s Net8 written entirely in Java, so it is platform independent, can be downloaded to a browser at runtime, and does not require any Oracle software on the client side. This driver requires a TCP/IP listener on the server side, and the client connection string uses the TCP/IP port address, not the TNSNAMES entry for the database name.

What is the difference between final, finally and finalize? What do you understand by the java final keyword?

Or

What is final, finalize() and finally?

Or

What is finalize() method?

Or

What is the difference between final, finally and finalize?

Or

What does it mean that a class or member is final?

o final - declare constant
o finally - handles exception
o finalize - helps in garbage collection

Variables defined in an interface are implicitly final. A final class can't be extended i.e., final class may not be subclassed. This is done for security reasons with basic classes like String and Integer. It also allows the compiler to make some optimizations, and makes thread safety a little easier to achieve. A final method can't be overridden when its class is inherited. You can't change value of a final variable (is a constant). finalize() method is used just before an object is destroyed and garbage collected. finally, a key word used in exception handling and will be executed whether or not an exception is thrown. For example, closing of open connections is done in the finally method.

What is the Java API?

The Java API is a large collection of ready-made software components that provide many useful capabilities, such as graphical user interface (GUI) widgets.

What is the GregorianCalendar class?

The GregorianCalendar provides support for traditional Western calendars.

What is the ResourceBundle class?

The ResourceBundle class is used to store locale-specific resources that can be loaded by a program to tailor the program's appearance to the particular locale in which it is being run.

Why there are no global variables in Java?
Global variables are globally accessible. Java does not support globally accessible variables due to following reasons:

* The global variables breaks the referential transparency
* Global variables creates collisions in namespace.

How to convert String to Number in java program?

The valueOf() function of Integer class is is used to convert string to Number.

Here is the code example:
```
String numString = "1000";
int id=Integer.valueOf(numString).intValue();
```

What is the SimpleTimeZone class?

The SimpleTimeZone class provides support for a Gregorian calendar.

What is the difference between a while statement and a do statement?

A while statement (pre test) checks at the beginning of a loop to see whether the next loop iteration should occur. A do while statement (post test) checks at the end of a loop to see whether the next iteration of a loop should occur. The do statement will always execute the loop body at least once.

What is the Locale class?

The Locale class is used to tailor a program output to the conventions of a particular geographic, political, or cultural region.

Describe the principles of OOPS.

There are three main principals of oops which are called Polymorphism, Inheritance and Encapsulation.

Explain the Inheritance principle.

Inheritance is the process by which one object acquires the properties of another object. Inheritance allows well-tested procedures to be reused and enables changes to make once and have effect in all relevant places

What is implicit casting?

Implicit casting is the process of simply assigning one entity to another without any transformation guidance to the compiler. This type of casting is not permitted in all kinds of transformations and may not work for all scenarios.

Example

```
int i = 1000;

long j = i; //Implicit casting
```

Is sizeof a keyword in java?

The sizeof operator is not a keyword.

What is a native method?

A native method is a method that is implemented in a language other than Java.

In System.out.println(), what is System, out and println?

System is a predefined final class, out is a PrintStream object and println is a built-in overloaded method in the out object.

What are Encapsulation, Inheritance and Polymorphism

Or

Explain the Polymorphism principle. Explain the different forms of Polymorphism.

Polymorphism in simple terms means one name many forms. Polymorphism enables one entity to be used as a general category for different types of actions. The specific action is determined by the exact nature of the situation.

Polymorphism exists in three distinct forms in Java:
• Method overloading
• Method overriding through inheritance
• Method overriding through the Java interface

What is explicit casting?

Explicit casting in the process in which the complier are specifically informed to about transforming the object.

Example

```
long i = 700.20;

int j = (int) i; //Explicit casting
```

What is the Java Virtual Machine (JVM)?

The Java Virtual Machine is software that can be ported onto various hardware-based platforms

What do you understand by downcasting?

The process of Downcasting refers to the casting from a general to a more specific type, i.e. casting down the hierarchy

What are Java Access Specifiers?

Or

What is the difference between public, private, protected and default Access Specifiers?

Or

What are different types of access modifiers?

Access specifiers are keywords that determine the type of access to the member of a class. These keywords are for allowing
privileges to parts of a program such as functions and variables. These are:
• Public : accessible to all classes
• Protected : accessible to the classes within the same package and any subclasses.
• Private : accessible only to the class to which they belong
• Default : accessible to the class to which they belong and to subclasses within the same package

Which class is the superclass of every class?

Object.

Name primitive Java types.

The 8 primitive types are byte, char, short, int, long, float, double, and boolean.

What is the difference between static and non-static variables?

Or

What are class variables?

Or

What is static in java?

Or

What is a static method?

A static variable is associated with the class as a whole rather than with specific instances of a class. Each object will share a common copy of the static variables i.e. there is only one copy per class, no matter how many objects are created from it. Class variables or static variables are declared with the static keyword in a class. These are declared outside a class and stored in static memory. Class variables are mostly used for constants. Static variables are always called by the class name. This variable is created when the program starts and gets destroyed when the programs stops. The scope of the class variable is same an instance variable. Its initial value is same as instance variable and gets a default value when its not initialized corresponding to the data type. Similarly, a static method is a method that belongs to the class rather than any object of the class and doesn't apply to an object or even require that any objects of the class have been instantiated.

Static methods are implicitly final, because overriding is done based on the type of the object, and static methods are attached to a class, not an object. A static method in a superclass can be shadowed by another static method in a subclass, as long as the original method was not declared final. However, you can't override a static method with a non-static method. In other words, you can't change a static method into an instance method in a subclass.

Non-static variables take on unique values with each object instance.

What is the difference between the boolean & operator and the && operator?

If an expression involving the boolean & operator is evaluated, both operands are evaluated, whereas the && operator is a short cut operator. When an expression involving the && operator is evaluated, the first operand is evaluated. If the first operand returns a value of true then the second operand is evaluated. If the first operand evaluates to false, the evaluation of the second operand is skipped.

How does Java handle integer overflows and underflows?

It uses those low order bytes of the result that can fit into the size of the type allowed by the operation.

What if I write static public void instead of public static void?

Program compiles and runs properly.

What is the difference between declaring a variable and defining a variable?

In declaration we only mention the type of the variable and its name without initializing it. Defining means declaration + initialization. E.g. String s; is just a declaration while String s = new String ("bob"); Or String s = "bob"; are both definitions.

What type of parameter passing does Java support?

In Java the arguments (primitives and objects) are always passed by value. With objects, the object reference itself is passed by value and so both the original reference and parameter copy both refer to the same object.

Explain the Encapsulation principle.

Encapsulation is a process of binding or wrapping the data and the codes that operates on the data into a single entity. This keeps the data safe from outside interface and misuse. Objects allow procedures to be encapsulated with their data to reduce potential interference. One way to think about encapsulation is as a protective wrapper that prevents code and data from being arbitrarily accessed by other code defined outside the wrapper.

What do you understand by a variable?

Variable is a named memory location that can be easily referred in the program. The variable is used to hold the data and it can be changed during the course of the execution of the program.

What do you understand by numeric promotion?

The Numeric promotion is the conversion of a smaller numeric type to a larger numeric type, so that integral and floating-point operations may take place. In the numerical promotion process the byte, char, and short values are converted to int values. The int values are also converted to long values, if necessary. The long and float values are converted to double values, as required.

What do you understand by casting in java language? What are the types of casting?

The process of converting one data type to another is called Casting. There are two types of casting in Java; these are implicit casting and explicit casting.

What is the first argument of the String array in main method?

The String array is empty. It does not have any element. This is unlike C/C++ where the first element by default is the program name. If we do not provide any arguments on the command line, then the String array of main method will be empty but not null.

How can one prove that the array is not null but empty?

Print array.length. It will print 0. That means it is empty. But if it would have been null then it would have thrown a NullPointerException on attempting to print array.length.

Can an application have multiple classes having main method?

Yes. While starting the application we mention the class name to be run. The JVM

will look for the main method only in the class whose name you have mentioned. Hence there is not conflict amongst the multiple classes having main method.

When is static variable loaded? Is it at compile time or runtime? When exactly a static block is loaded in Java?

Static variable are loaded when classloader brings the class to the JVM. It is not necessary that an object has to be created. Static variables will be allocated memory space when they have been loaded. The code in a static block is loaded/executed only once i.e. when the class is first initialized. A class can have any number of static blocks. Static block is not member of a class, they do not have a return statement and they cannot be called directly. Cannot contain this or super. They are primarily used to initialize static fields.

Can I have multiple main methods in the same class?

We can have multiple overloaded main methods but there can be only one main method with the following signature :

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

No the program fails to compile. The compiler says that the main method is already defined in the class.

Explain working of Java Virtual Machine (JVM)?

JVM is an abstract computing machine like any other real computing machine which first converts .java file into .class file by using Compiler (.class is nothing but byte code file.) and Interpreter reads byte codes.

How can I swap two variables without using a third variable?

Add two variables and assign the value into First variable. Subtract the Second value with the result Value. and assign to Second variable. Subtract the Result of First Variable With Result of Second Variable and Assign to First Variable. Example:

```
int a=5,b=10;a=a+b; b=a-b; a=a-b;
```

An other approach to the same question

You use an XOR swap.

for example:

```
int a = 5; int b = 10;
a = a ^ b;
b = a ^ b;
a = a ^ b;
```

What is data encapsulation?

Encapsulation may be used by creating 'get' and 'set' methods in a class (JAVABEAN) which are used to access the fields of the object. Typically the fields are made private while the get and set methods are public. Encapsulation can be used to validate the data that is to be stored, to do calculations on data that is stored in a field or fields, or for use in introspection (often the case when using javabeans in Struts, for instance). Wrapping of data and function into a

single unit is called as data encapsulation. Encapsulation is nothing but wrapping up the data and associated methods into a single unit in such a way that data can be accessed with the help of associated methods. Encapsulation provides data security. It is nothing but data hiding.

What is reflection API? How are they implemented?

Reflection is the process of introspecting the features and state of a class at runtime and dynamically manipulate at run time. This is supported using Reflection API with built-in classes like Class, Method, Fields, Constructors etc. Example: Using Java Reflection API we can get the class name, by using the getName method.

Does JVM maintain a cache by itself? Does the JVM allocate objects in heap? Is this the OS heap or the heap maintained by the JVM? Why

Yes, the JVM maintains a cache by itself. It creates the Objects on the HEAP, but references to those objects are on the STACK.

What is phantom memory?

Phantom memory is false memory. Memory that does not exist in reality.

Can a method be static and synchronized?

A static method can be synchronized. If you do so, the JVM will obtain a lock on the java.lang.
Class instance associated with the object. It is similar to saying:

```
synchronized(XYZ.class) {

}
```

What is difference between String and StringTokenizer?

A StringTokenizer is utility class used to break up string.

Example:

```
StringTokenizer st = new StringTokenizer("Hello World");

   while (st.hasMoreTokens()) {

     System.out.println(st.nextToken());

     }
```

Output:

```
Hello

World
```

General Java
1.What is the difference between procedural and object-oriented programs?- a) In procedural program, programming logic follows certain procedures and the instructions are executed one after another. In OOP program, unit of program is object, which is nothing but combination of data and code. b) In procedural program, data is exposed to the whole program whereas in OOPs program, it is accessible with in the object and which in turn assures the security of the code.

2.What are Encapsulation, Inheritance and Polymorphism?- Encapsulation is the mechanism that binds together code and data it manipulates and keeps both safe from outside interference and misuse. Inheritance is the process by which one object acquires the properties of another object. Polymorphism is the feature that allows one interface to be used for general class actions.
3.What is the difference between Assignment and Initialization?- Assignment can be done as many times as desired whereas initialization can be done only once.
4.What is OOPs?- Object oriented programming organizes a program around its data, i. e. , objects and a set of well defined interfaces to that data. An object-oriented program can be characterized as data controlling access to code.
5.What are Class, Constructor and Primitive data types?- Class is a template for multiple objects with similar features and it is a blue print for objects. It defines a type of object according to the data the object can hold and the operations the object can perform. Constructor is a special kind of method that determines how an object is initialized when created. Primitive data types are 8 types and they are: byte, short, int, long, float, double, boolean, char.
6.What is an Object and how do you allocate memory to it?- Object is an instance of a class and it is a software unit that combines a structured set of data with a set of operations for inspecting and manipulating that data. When an object is created using new operator, memory is allocated to it.
7.What is the difference between constructor and method?- Constructor will be automatically invoked when an object is created whereas method has to be called explicitly.
8.What are methods and how are they defined?- Methods are functions that operate on instances of classes in which they are defined. Objects can communicate with each other using methods and can call methods in other classes. Method definition has four parts. They are name of the method, type of object or primitive type the method returns, a list of parameters and the body of the method. A method’s signature is a combination of the first three parts mentioned above.
9.What is the use of bin and lib in JDK?- Bin contains all tools such as javac, appletviewer, awt tool, etc., whereas lib contains API and all packages.
10.What is casting?- Casting is used to convert the value of one type to another.
11.How many ways can an argument be passed to a subroutine and explain them?- An argument can be passed in two ways. They are passing by value and passing by reference. Passing by value: This method copies the value of an argument into the formal parameter of the subroutine. Passing by reference: In this method, a reference to an argument (not the value of the argument) is passed to the parameter.
12.What is the difference between an argument and a parameter?- While defining method, variables passed in the method are called parameters. While using those methods, values passed to those variables are called arguments.
13.What are different types of access modifiers?- public: Any thing declared as public can be accessed from anywhere. private: Any thing declared as private can’t be seen outside of its class. protected: Any thing declared as protected can be accessed by classes in the same package and subclasses in the other packages. default modifier : Can be accessed only to classes in the same package.
14.What is final, finalize() and finally?- final : final keyword can be used for class, method and variables. A final class cannot be subclassed and it prevents other programmers from subclassing a secure class to invoke insecure methods. A final method can’t be overridden. A final variable can’t change from its initialized value. finalize() : finalize() method is used just before an object is destroyed and can be called just prior to garbage collection. finally : finally, a key word used in exception handling, creates a block of code that will be executed after a try/catch block has completed and before the code following the try/catch block. The finally block will execute whether or not an exception is thrown. For example, if a method opens a file upon exit, then you will not want the code that closes the file to be bypassed by the exception-handling mechanism. This finally keyword is designed to address this contingency.

15.What is UNICODE?- Unicode is used for internal representation of characters and strings and it uses 16 bits to represent each other.
16.What is Garbage Collection and how to call it explicitly?- When an object is no longer referred to by any variable, java automatically reclaims memory used by that object. This is known as garbage collection. System. gc() method may be used to call it explicitly.
17.What is finalize() method?- finalize () method is used just before an object is destroyed and can be called just prior to garbage collection.
18.What are Transient and Volatile Modifiers?- Transient: The transient modifier applies to variables only and it is not stored as part of its object's Persistent state. Transient variables are not serialized. Volatile: Volatile modifier applies to variables only and it tells the compiler that the variable modified by volatile can be changed unexpectedly by other parts of the program.
19.What is method overloading and method overriding?- Method overloading: When a method in a class having the same method name with different arguments is said to be method overloading. Method overriding : When a method in a class having the same method name with same arguments is said to be method overriding.
20.What is difference between overloading and overriding?- a) In overloading, there is a relationship between methods available in the same class whereas in overriding, there is relationship between a superclass method and subclass method. b) Overloading does not block inheritance from the superclass whereas overriding blocks inheritance from the superclass. c) In overloading, separate methods share the same name whereas in overriding, subclass method replaces the superclass. d) Overloading must have different method signatures whereas overriding must have same signature.
21.What is meant by Inheritance and what are its advantages?- Inheritance is the process of inheriting all the features from a class. The advantages of inheritance are reusability of code and accessibility of variables and methods of the super class by subclasses.
22.What is the difference between this() and super()?- this() can be used to invoke a constructor of the same class whereas super() can be used to invoke a super class constructor.
23.What is the difference between superclass and subclass?- A super class is a class that is inherited whereas sub class is a class that does the inheriting.
24.What modifiers may be used with top-level class?- public, abstract and final can be used for top-level class.
25.What are inner class and anonymous class?- Inner class : classes defined in other classes, including those defined in methods are called inner classes. An inner class can have any accessibility including private. Anonymous class : Anonymous class is a class defined inside a method without a name and is instantiated and declared in the same place and cannot have explicit constructors.

26.What is a package?- A package is a collection of classes and interfaces that provides a high-level layer of access protection and name space management.
27.What is a reflection package?- java. lang. reflect package has the ability to analyze itself in runtime.
28.What is interface and its use?- Interface is similar to a class which may contain method's signature only but not bodies and it is a formal set of method and constant declarations that must be defined by the class that implements it. Interfaces are useful for: a)Declaring methods that one or more classes are expected to implement b)Capturing similarities between unrelated classes without forcing a class relationship. c)Determining an object's programming interface without revealing the actual body of the class.
29.What is an abstract class?- An abstract class is a class designed with implementation gaps for subclasses to fill in and is deliberately incomplete.
30.What is the difference between Integer and int?- a) Integer is a class defined in the java. lang package, whereas int is a primitive data type defined in the Java language itself. Java does not automatically convert from one to the other.

b) Integer can be used as an argument for a method that requires an object, whereas int can be used for calculations.
31.What is a cloneable interface and how many methods does it contain?- It is not having any method because it is a TAGGED or MARKER interface.
32.What is the difference between abstract class and interface?- a) All the methods declared inside an interface are abstract whereas abstract class must have at least one abstract method and others may be concrete or abstract. b) In abstract class, key word abstract must be used for the methods whereas interface we need not use that keyword for the methods. c) Abstract class must have subclasses whereas interface can't have subclasses.
33.Can you have an inner class inside a method and what variables can you access?- Yes, we can have an inner class inside a method and final variables can be accessed.
34.What is the difference between String and String Buffer?- a) String objects are constants and immutable whereas StringBuffer objects are not. b) String class supports constant strings whereas StringBuffer class supports growable and modifiable strings.
35.What is the difference between Array and vector?- Array is a set of related data type and static whereas vector is a growable array of objects and dynamic.
36.What is the difference between exception and error?- The exception class defines mild error conditions that your program encounters. Exceptions can occur when trying to open the file, which does not exist, the network connection is disrupted, operands being manipulated are out of prescribed ranges, the class file you are interested in loading is missing. The error class defines serious error conditions that you should not attempt to recover from. In most cases it is advisable to let the program terminate when such an error is encountered.
37.What is the difference between process and thread?- Process is a program in execution whereas thread is a separate path of execution in a program.
38.What is multithreading and what are the methods for inter-thread communication and what is the class in which these methods are defined?- Multithreading is the mechanism in which more than one thread run independent of each other within the process. wait (), notify () and notifyAll() methods can be used for inter-thread communication and these methods are in Object class. wait() : When a thread executes a call to wait() method, it surrenders the object lock and enters into a waiting state. notify() or notifyAll() : To remove a thread from the waiting state, some other thread must make a call to notify() or notifyAll() method on the same object.
39.What is the class and interface in java to create thread and which is the most advantageous method?- Thread class and Runnable interface can be used to create threads and using Runnable interface is the most advantageous method to create threads because we need not extend thread class here.
40.What are the states associated in the thread?- Thread contains ready, running, waiting and dead states.
41.What is synchronization?- Synchronization is the mechanism that ensures that only one thread is accessed the resources at a time.
42.When you will synchronize a piece of your code?- When you expect your code will be accessed by different threads and these threads may change a particular data causing data corruption.
43.What is deadlock?- When two threads are waiting each other and can't precede the program is said to be deadlock.
44.What is daemon thread and which method is used to create the daemon thread?- Daemon thread is a low priority thread which runs intermittently in the back ground doing the garbage collection operation for the java runtime system. setDaemon method is used to create a daemon thread.
45.Are there any global variables in Java, which can be accessed by other part of your program?- No, it is not the main method in which you define variables. Global variables is not possible because concept of encapsulation is eliminated here.
46.What is an applet?- Applet is a dynamic and interactive program that runs

inside a web page displayed by a java capable browser.
47.What is the difference between applications and applets?- a)Application must be run on local machine whereas applet needs no explicit installation on local machine. b)Application must be run explicitly within a java-compatible virtual machine whereas applet loads and runs itself automatically in a java-enabled browser. d)Application starts execution with its main method whereas applet starts execution with its init method. e)Application can run with or without graphical user interface whereas applet must run within a graphical user interface.
48.How does applet recognize the height and width?- Using getParameters() method.
49.When do you use codebase in applet?- When the applet class file is not in the same directory, codebase is used.
50.What is the lifecycle of an applet?- init() method - Can be called when an applet is first loaded start() method - Can be called each time an applet is started. paint() method - Can be called when the applet is minimized or maximized. stop() method - Can be used when the browser moves off the applet's page. destroy() method - Can be called when the browser is finished with the applet.
51.How do you set security in applets?- using setSecurityManager() method
52.What is an event and what are the models available for event handling?- An event is an event object that describes a state of change in a source. In other words, event occurs when an action is generated, like pressing button, clicking mouse, selecting a list, etc. There are two types of models for handling events and they are: a) event-inheritance model and b) event-delegation model
53.What are the advantages of the model over the event-inheritance model?- The event-delegation model has two advantages over the event-inheritance model. They are: a)It enables event handling by objects other than the ones that generate the events. This allows a clean separation between a component's design and its use. b)It performs much better in applications where many events are generated. This performance improvement is due to the fact that the event-delegation model does not have to be repeatedly process unhandled events as is the case of the event-inheritance.
54.What is source and listener?- source : A source is an object that generates an event. This occurs when the internal state of that object changes in some way. listener : A listener is an object that is notified when an event occurs. It has two major requirements. First, it must have been registered with one or more sources to receive notifications about specific types of events. Second, it must implement methods to receive and process these notifications.
55.What is adapter class?- An adapter class provides an empty implementation of all methods in an event listener interface. Adapter classes are useful when you want to receive and process only some of the events that are handled by a particular event listener interface. You can define a new class to act listener by extending one of the adapter classes and implementing only those events in which you are interested. For example, the MouseMotionAdapter class has two methods, mouseDragged()and mouseMoved(). The signatures of these empty are exactly as defined in the MouseMotionListener interface. If you are interested in only mouse drag events, then you could simply extend MouseMotionAdapter and implement mouseDragged() .
56.What is meant by controls and what are different types of controls in AWT?- Controls are components that allow a user to interact with your application and the AWT supports the following types of controls: Labels, Push Buttons, Check Boxes, Choice Lists, Lists, Scrollbars, Text Components. These controls are subclasses of Component.
57.What is the difference between choice and list?- A Choice is displayed in a compact form that requires you to pull it down to see the list of available choices and only one item may be selected from a choice. A List may be displayed in such a way that several list items are visible and it supports the selection of one or more list items.
58.What is the difference between scrollbar and scrollpane?- A Scrollbar is a Component, but not a Container whereas Scrollpane is a Conatiner and handles its

own events and perform its own scrolling.
59.What is a layout manager and what are different types of layout managers available in java AWT?- A layout manager is an object that is used to organize components in a container. The different layouts are available are FlowLayout, BorderLayout, CardLayout, GridLayout and GridBagLayout.
60.How are the elements of different layouts organized?- FlowLayout: The elements of a FlowLayout are organized in a top to bottom, left to right fashion. BorderLayout: The elements of a BorderLayout are organized at the borders (North, South, East and West) and the center of a container. CardLayout: The elements of a CardLayout are stacked, on top of the other, like a deck of cards. GridLayout: The elements of a GridLayout are of equal size and are laid out using the square of a grid. GridBagLayout: The elements of a GridBagLayout are organized according to a grid. However, the elements are of different size and may occupy more than one row or column of the grid. In addition, the rows and columns may have different sizes.

61.Which containers use a Border layout as their default layout?- Window, Frame and Dialog classes use a BorderLayout as their layout.
62.Which containers use a Flow layout as their default layout?- Panel and Applet classes use the FlowLayout as their default layout.
63.What are wrapper classes?- Wrapper classes are classes that allow primitive types to be accessed as objects.
64.What are Vector, Hashtable, LinkedList and Enumeration?- Vector : The Vector class provides the capability to implement a growable array of objects. Hashtable : The Hashtable class implements a Hashtable data structure. A Hashtable indexes and stores objects in a dictionary using hash codes as the object’s keys. Hash codes are integer values that identify objects. LinkedList: Removing or inserting elements in the middle of an array can be done using LinkedList. A LinkedList stores each object in a separate link whereas an array stores object references in consecutive locations. Enumeration: An object that implements the Enumeration interface generates a series of elements, one at a time. It has two methods, namely hasMoreElements() and nextElement(). HasMoreElemnts() tests if this enumeration has more elements and nextElement method returns successive elements of the series.
65.What is the difference between set and list?- Set stores elements in an unordered way but does not contain duplicate elements, whereas list stores elements in an ordered way but may contain duplicate elements.
66.What is a stream and what are the types of Streams and classes of the Streams?- A Stream is an abstraction that either produces or consumes information. There are two types of Streams and they are: Byte Streams: Provide a convenient means for handling input and output of bytes. Character Streams: Provide a convenient means for handling input & output of characters. Byte Streams classes: Are defined by using two abstract classes, namely InputStream and OutputStream. Character Streams classes: Are defined by using two abstract classes, namely Reader and Writer.
67.What is the difference between Reader/Writer and InputStream/Output Stream?- The Reader/Writer class is character-oriented and the InputStream/OutputStream class is byte-oriented.
68.What is an I/O filter?- An I/O filter is an object that reads from one stream and writes to another, usually altering the data in some way as it is passed from one stream to another.
69.What is serialization and deserialization?- Serialization is the process of writing the state of an object to a byte stream. Deserialization is the process of restoring these objects.
70.What is JDBC?- JDBC is a set of Java API for executing SQL statements. This API consists of a set of classes and interfaces to enable programs to write pure Java Database applications.
71.What are drivers available?- a) JDBC-ODBC Bridge driver b) Native API Partly-Java driver c) JDBC-Net Pure Java driver d) Native-Protocol Pure Java driver
72.What is the difference between JDBC and ODBC?- a) OBDC is for Microsoft and

JDBC is for Java applications. b) ODBC can’t be directly used with Java because it uses a C interface. c) ODBC makes use of pointers which have been removed totally from Java. d) ODBC mixes simple and advanced features together and has complex options for simple queries. But JDBC is designed to keep things simple while allowing advanced capabilities when required. e) ODBC requires manual installation of the ODBC driver manager and driver on all client machines. JDBC drivers are written in Java and JDBC code is automatically installable, secure, and portable on all platforms. f) JDBC API is a natural Java interface and is built on ODBC. JDBC retains some of the basic features of ODBC.
73.What are the types of JDBC Driver Models and explain them?- There are two types of JDBC Driver Models and they are: a) Two tier model and b) Three tier model Two tier model: In this model, Java applications interact directly with the database. A JDBC driver is required to communicate with the particular database management system that is being accessed. SQL statements are sent to the database and the results are given to user. This model is referred to as client/server configuration where user is the client and the machine that has the database is called as the server. Three tier model: A middle tier is introduced in this model. The functions of this model are: a) Collection of SQL statements from the client and handing it over to the database, b) Receiving results from database to the client and c) Maintaining control over accessing and updating of the above.
74.What are the steps involved for making a connection with a database or how do you connect to a database?a) Loading the driver : To load the driver, Class. forName() method is used. Class. forName(”sun. jdbc. odbc. JdbcOdbcDriver”); When the driver is loaded, it registers itself with the java. sql. DriverManager class as an available database driver. b) Making a connection with database: To open a connection to a given database, DriverManager. getConnection() method is used. Connection con = DriverManager. getConnection (”jdbc:odbc:somedb”, “user”, “password”); c) Executing SQL statements : To execute a SQL query, java. sql. statements class is used. createStatement() method of Connection to obtain a new Statement object. Statement stmt = con. createStatement(); A query that returns data can be executed using the executeQuery() method of Statement. This method executes the statement and returns a java. sql. ResultSet that encapsulates the retrieved data: ResultSet rs = stmt. executeQuery(”SELECT * FROM some table”); d) Process the results : ResultSet returns one row at a time. Next() method of ResultSet object can be called to move to the next row. The getString() and getObject() methods are used for retrieving column values: while(rs. next()) { String event = rs. getString(”event”); Object count = (Integer) rs. getObject(”count”);
75.What type of driver did you use in project?- JDBC-ODBC Bridge driver (is a driver that uses native(C language) libraries and makes calls to an existing ODBC driver to access a database engine).
76.What are the types of statements in JDBC?- Statement: to be used createStatement() method for executing single SQL statement PreparedStatement – To be used preparedStatement() method for executing same SQL statement over and over. CallableStatement – To be used prepareCall() method for multiple SQL statements over and over.

General Java
1 Q Why threads block or enters to waiting state on I/O?
A Threads enters to waiting state or block on I/O because other threads can execute while the I/O operations are performed.
2 Q What are transient variables in java? A
Transient variables are variable that cannot be serialized.
3 Q How Observer and Observable are used? A
Subclass of Observable class maintain a list of observers. Whenever an Observable object is updated, it invokes the update() method of each of its observers to notify the observers that it has a changed state. An observer isany object that implements the interface Observer.

4 Q What is synchronization A
Synchronization is the ability to control the access of multiple threads to shared resources. Synchronization stops multithreading. With synchronization , ata time only one thread will be able to access a shared resource.
5 Q What is List interface ? A List is an ordered collection of objects.
6 Q What is a Vector A Vector is a grow able array of objects.
7 Q What is the difference between yield() and sleep()? A
When a object invokes yield() it returns to ready state. But when an object invokes sleep() method enters to not ready state.
8 Q What are Wrapper Classes ? A They are wrappers to primitive data types. They allow us to access primitives as objects.
9 Q Can we call finalize() method ? A Yes.Nobody will stop us to call any method , if it is accessible in our class. But a garbage collector cannot call an object's finalize method if that object is reachable.
10 Q What is the difference betweentime slicing andpreemptive scheduling ?A
In preemptive scheduling, highest priority task continues execution till it enters a not running state or a higher priority task comes into existence. In time slicing, the task continues its execution for a predefined period of time and reenters the pool of ready tasks.
11 Q What is the initial state of a thread when it is created and started? A The thread is in ready state. 12 Q Can we declare an anonymous class as both extending a class and implementing an interface? A
No. An anonymous class can extend a class or implement an interface, but it cannot be declared to do both
13 Q What are the differences between boolean & operator and& operator A
When an expression containing the & operator is evaluated, both operands are evaluated. And the & operator is applied to the operand. When an expression containing && operator is evaluated, the first operand is evaluated. If the first operand returns a value of true then only the second operand is evaluated otherwise the second part will not get executed.&& is also called short cut and.
14 Q What is the use of the finally block? A
Finally is the block of code that executes always. The code in finally block will execute even if an exception is occurred. finally will not execute when the user calls System.exit().
15 Q What is an abstract method ? A
An abstract method is a method that don't have a body. It is declared with modifier abstract.
16 Q what is a the difference between System.err and System.out A
We can redirect System.out to another file but we cannot redirect System.err stream
17 Q What arethe differences between an abstract class and an interface? A
An abstract class can have concrete method, which is not allowed in an interface. Abstract class can have private or protected methods and variables and only public methods and variables are allowed in interface. We can implement more than one interface , but we can extend only one abstract class. Interfaces provides loose coupling where as abstract class provides tight coupling.
18 Q What is the difference between synchronized block and synchronized method ? A
Synchronized blocks place locks for the specified block where as synchronized methods place locks for the entire method. 19 Q How can you force garbage collection in java? A
You cannot force Garbage Collection, but you can request for it by calling the method System.gc().But it doesn't mean that Garbage Collection will start immediately. The garbage collection is a low priority thread of JVM.
20 Q How can you call a constructor from another constructor ? A By using this() reference. 21 Q How can you call the constructor of super class ? A By using super() syntax. 22 Q What's the difference between normal methods and constructors? A
Constructors must have the same name of the class and can not have a return type.

They are called only once,while regular methods can be called whenever required. We cannot explicitly call a constructor.
23 Q What is the use of packages in java ? A
Packages are a way to organize files in java when a project consists of more than one module. It helps in resolving name conflicts when different modules have classes with the same names.
24 Q What must be the order of catch blocks when catching more than one exception? A
The sub classes must come first. Otherwise it will give a compile time error.
25 Q How can we call a method or variable of the super class from child class ?A
We can use super.method() or super.variable syntax for this purpose.
26 Q If you are overriding equals() method of a class, what other methods you might need to override ? A hashCode 27 Q How can you create your own exception ? A

Our class must extend either Exception or its sub class
28 Q What is serialization ? A
Serialization is the process of saving the state of an object.
29 Q What is de-serialization? A De-serialization is the process of restoring the state of an object. 30 Q What is externalizable ? A
It is an interface that extends Serializable. It is having two different methods writeExternal() and readExternal. This interface allows us to customize the output.
31 Q Does garbage collection guarantee that a program will not run out of memory? A
Garbage collection does not guarantee that a program will not run out of memory. It is also possible for programs to create objects that are not subject to garbage collection. And there is no guarantee that Garbage Collection thread will be executed.
32 Q What is a native method? A
A native method is a method that is implemented in a language other than Java.
33 Q What are different type of exceptions in Java? A
There are two types of exceptions in java. Checked exceptions and Unchecked exceptions. Any exception that is is derived from Throwable and Exception is called checked exception except RuntimeException and its sub classes. The compiler will check whether the exception is caught or not at compile time. We need to catch the checked exception or declare in the throws clause.Any exception that is derived from Error and RuntimeException is called unchecked exception. We don't need to explicitly catch a unchecked exception.
34 Q Can we catch an error in our java program ? A
Yes. We can . We can catch anything that is derived from Throwable. Since Error is a sub class of Throwable we can catch an error also.
35 Q What is thread priority? A
Thread Priority is an integer value that identifies the relative order in which it should be executed with respect to others. The thread priority values ranging from 1- 10 and the default value is 5. But if a thread have higher priority doesn't means that it will execute first. The thread scheduling depends on the OS.
36 Q How many times may an object's finalize() method be invoked by the garbage collector? A
Only once.
37 Q What is the difference between a continue statement and a break statement? A
Break statement results in the immediate termination of the statement to which it applies (switch, for, do, or while). A continue statement is used to end the current loop iteration and return control to the loop statement.
38 Q What must a class do to implement an interface? A
It must identify the interface in its implements clause. Also it must provide definition for all the methods in the interface otherwise it must be declared abstract.
39 Q What is an abstract class? A

An abstract class is an incomplete class. It is declared with the modifier abstract. We cannot create objects of the abstract class. It is used to specify a common behavioral protocol for all its child classes.
40 Q What is the difference between notify and notifyAll method ? A
notify wakes up a single thread that is waiting for object's monitor. If any threads are waiting on this object, one of them is chosen to be awakened. The choice is arbitrary and occurs at the discretion of the implementation. notifyAll Wakes up all threads that are waiting on this object's monitor. A thread waits on an object's monitor by calling one of the wait methods.
41 Q What does wait method do ? A
It causes current thread to wait until either another thread invokes notify or notifyAll method of the current object, or a specified amount of time has elapsed.
42 Q What are the different states of a thread ? A The different thread states are ready, running, waiting and dead. 43 Q What is the difference between static and non static inner class ? A
A non-static inner class can have an object instances that are associated with instances of the class's outer class. A static inner class can not have any object instances.
44 Q What is the difference between String and StringBuffer class ? A
Strings are immutable (constant), their values cannot be changed after they are created. StringBuffer supports mutable objects.
45 Q Which is the base class for all classes ? A java.lang.Object.
46 Q What is the difference between readers and streams? A
Readers are character oriented where streams are byte oriented.The readers are having full support for Unicode data.
47 Q What is constructor chaining ? A
When a constructor of a class is executed it will automatically call the default constructor of the super class (if no explicit call to any of the super class constructor) till the root of the hierarchy.
48 Q What are the different primitive data type in java ? A
There are 8 primitive types in java. boolean , char, byte, short, int long, float, double.
49 Q What is static ? A
static means one per class.static variables are created when the class loads. They are associated with the class.In order to access a static we don't need objects. We can directly access static methods and variable by calling classname.variablename.
50 Q Why we cannot override static methods? A
Static means they are associated with a class. In static methods , the binding mechanism is static binding. So it must be available at the compile time.
51 Q What is the difference between static and non static variables ? A
A static variable is associated with the class as a whole rather than with specific instances of a class. There will be only one value for static variable for all instances of that class.Non-static variables take on unique values with each object instance.
52 Q When does a compiler supplies a default constructor for a class? A
If there is no other constructor exist in a class, the compiler will supply a default constructor.
53 Q What are the restrictions placed on overriding a method ? A
The overridden method have the exact signature of the super class method, including the return type. The access specified cannot be less restrictive than the super class method. We cannot throw any new exceptions in overridden method.
54 Q What are the restrictions placed on overloading a method ? A
Overloading methods must differ in their parameter list, or number of parameters.
55 Q What is casting ? A
Casting means converting one type to another. There are mainly two types of casting. Casting between primitive types and casting between object references. Casting between primitive numeric types is used to convert larger data types to

smaller data types. Casting between object references is used to refer to an object by a compatible class, interface, or array type reference.
56 Q What is the difference between == and equals ? A
The equals method can be considered to perform a deep comparison of the value of an object, whereas the == operator performs a shallow comparison.If we are not overriding the equals method both will give the same result. == will is used to compare the object references. It is used to check whether two objects are points to the same reference.
57 Q What is a void return type ? A
A void indicates that the method will not return anything.
58 Q What will happen if an exception is not caught ? A
An uncaught exception results in the uncaughtException() method of the thread's ThreadGroup, which results in the termination of the program.
59 Q What are the different ways in which a thread can enter into waiting state? A

There are three ways for a thread to enter into waiting state. By invoking its sleep() method, by blocking on I/O, by unsuccessfully attempting to acquire an object's lock, or by invoking an object's wait() method.
60 Q What is a ResourceBundle class? A
The ResourceBundle class is used to store locale-specific resources that can be loaded by a program to create the program's appearance to the particular locale in which it is being run.
61 Q What is numeric promotion? A
Numeric promotion is the conversion of a smaller numeric type to a larger numeric type. In numerical promotion, byte, char, and short values are converted to intvalues. The int, long and float values are converted to the desired types if required.
62 Q What is the difference between the prefix and postfix forms of the ++ operator? A
The prefix form first performs the increment operation and then returns the value of the increment operation. The postfix form first returns the current value of the expression and then performs the increment operation on that value.
63 Q What are synchronized methods and synchronized statements? A
Synchronized methods are methods that are declared with the keyword synchronized. A thread executes a synchronized method only after it has acquired the lock for the method's object or class. Synchronized statements are similar to synchronized methods. It is a block of code declared with synchronized keyword. A synchronized statement can be executed only after a thread has acquired the lock for the object or class referenced in the synchronized statement.
64 Q How can we create a thread? A
A thread can be created by extending Thread class or by implementing Runnable interface. Then we need to override the method public void run().
65 Q What is the difference between a switch statement and an if statement? A
If statement is used to select from two alternatives. It uses a boolean expression to decide which alternative should be executed. The expression in if must be a boolean value.The switch statement is used to select from multiple alternatives.The case values must be promoted to anto int value.
66 Q What is hashCode? A
The hashcode of a Java Object is simply a number (32-bit signed int) that allows an object to be managed by a hash-based data structure. A hashcode should be, equal for equal object (this is mandatory!) ,fast to compute based on all or most of the internal state of an object, use all or most of the space of 32-bit integers in a fairly uniform way , and likely to be different even for objects that are very similar. If you are overriding hashCode you need to override equals method also.
67 Q What is an I/O filter? A
An I/O filter is an object that reads from one stream and writes to another, usually altering the data in some way as it is passed from one stream to another.

68 Q What is the difference between RandomAccessFile and File? A
The File class contains informationthe files and directories of the local file system. The RandomAccessFile class containsthe methods needed to directly access data contained in any part of a file.
69 Q What is final ? A
A final is a keyword in java. If final keyword is applied to a variable, then the variable will become a constant. If it applied to method, sub classes cannot override the method. If final keyword is applied to a class we cannot extend from that class.
70 Q What is the difference among JVM Spec, JVM Implementation, JVM Runtime ? A
The JVM spec is the blueprint for the JVM generated and owned by Sun. The JVM implementation is the actual implementation of the spec by a vendor and the JVM runtime is the actual running instance of a JVM implementation
71 Q How is the difference between thread and process? A
A process runs in its own address space. No two processes share their address space. Threads will run in the same address space of the process that owns them.
72 Q What is the difference between Vector and ArrayList ? A
Vector is synchronized, ArrayList is not. Vector is having a constructor to specify the incremental capacity. But ArrayList don't have. By default Vector grows by 100% but ArrayList grows by 50% only.
73 Q What is the difference between Hashtable and HashMap ? A
Hashtable is synchronized . but HashMap is not synchronized.Hashtable does not allow null values , but HashMap allows null values.
74 Q What are the access modifiers available in Java. A
Access modifier specify where a method or attribute can be used. Public is accessible from anywhere. Protected is accessible from the same class and its subclasses. Package/Default are accessible from the same package. Private is only accessible from within the class.
75 Q Why java is said to be pass-by-value ? A
When assigning an object to a variable, we are actually assigning the memory address of that object to the variable. So the value passed is actually the memory location of the object. This results in object aliasing, meaning you can have many variables referring to the same object on the heap.
76 Q What do you mean by immutable ? How to create an immutable object ? A
Immutability means an object cannot be modified after it has been initialized.There will not be any setter methods in an immutable class. And normally these classes will be final.
77 Q What is class loader in java ? A
A class loader is a class that is responsible for loading the class. All JVM contains one class loader called primordial class loader.
78 Q What is a weak reference ? A
A weak reference is the one that does nor prevent the referenced object from being garbage collected. The weak reference will not keep the object that it refers to alive. A weak reference is not counted as a reference in garbage collection. This will make the memory use more effective.
79 Q What is object cloning? A
It is the process of duplicating an object so that two identical objects will exist in the memory at the same time.
80 Q What is object pooling? A
Creating a large number of identical short lived objects is called object pooling. This helps to minimize the need of garbage collection and makes the memory use more effective.
81 Q What is garbage collection? A
Garbage collection is the process of releasing memory used by unreferenced objects. It relieves the programmer from the process of manually releasing the memory used by objects .
82 Q What is the disadvantage of garbage collection? A
It adds an overhead that can affect performance. Additionally there is no

guarantee that the object will be garbage collected.
83 Q What is a Dictionary? A
Dictionary is a parent class for any class that maps keys to values., In a dictionary every key is associated with at most one value.
84 Q What is JAR file ? A
JAR stands for Java Archive. This is a file format that enables you to bundle multiple files into a single archive file.A jar file will contains a manifest.mf file inside META-INF folder that describes the version and other features of jar file.
85 Q Why Java is not fully objective oriented ? A
Due to the use of primitives in java, which are not objects.
86 Q What is a marker interface ? A
An interface that contains no methods. Eg: Serializable, Cloneable, SingleThreadModel etc. It is used to just mark java classes that support certain capability.
87 Q What are tag interfaces? A
Tag interface is an alternate name for marker interface.
88 Q What are the restrictions placed on static method ? A
We cannot override static methods. We cannot access any object variables inside static method. Also the this reference also not available in static methods.
89 Q What is JVM? A
JVM stands for Java Virtual Machine. It is the run time for java programs. All are java programs are running inside this JVM only. It converts java byte code to OS specific commands. In addition to governing the execution of an application's byte codes, the virtual machine handles related tasks such as managing the system's memory, providing security against malicious code, and managing multiple threads of program execution.
90 Q What is JIT? A JIT stands for Just In Time compiler. It compiles java byte code to native code.
91 Q What is java byte code? A
Byte code is an sort of intermediate code. The byte code is processed by virtual machine.
92 Q What is method overloading? A Method overloading is the process of creating a new method with the same name and different signature. 93 Q What is method overriding? A
Method overriding is the process of giving a new definition for an existing method in its child class.
94 Q What is finalize() ? A
Finalize is a protected method in java. When the garbage collector is executes , it will first call finalize( ), andon the next garbage-collection it reclaim the objects memory. So finalize( ), gives you the chance to perform some cleanup operation at the time of garbage collection.
95 Q What is multi-threading? A Multi-threading is the scenario where more than one threads are running. 96 Q What is deadlock? A
Deadlock is a situation when two threads are waiting on each other to release a resource. Each thread waiting for a resource which is held by the other waiting thread.
97 Q What is the difference between Iterator and Enumeration? A
Iterator differ from enumeration in two ways Iterator allow the caller to remove elements from the underlying collection during the iteration with well-defined semantics. And , method names have been improved.
98 Q What is the Locale class? A A Locale object represents a specific geographical, political, or cultural region 99 Q What is internationalization? A
Internationalization is the process of designing an application so that it can be adapted to various languages and regions without changes.
100 Q What is anonymous class ? A An anonymous class is a type of inner class that don't have any name. 101 Q What is the difference between URL and URLConnection? A

A URL represents the location of a resource, and a URLConnection represents a link for accessing or communicating with the resource at the location.
102 Q What are the two important TCP Socket classes? A
ServerSocket and Socket. ServerSocket is useful for two-way socket communication. Socket class help us to read and write through the sockets. getInputStream() and getOutputStream() are the two methods available in Socket class.
103 Q Strings are immutable. But String s="Hello"; String s1=s+"World" returns HelloWorld how ? A Here actually a new object is created with the value of HelloWorld 104 Q What is classpath? A Classpath is the path where Java looks for loading class at run time and compile time. 105 Q What is path? A
It is an the location where the OS will look for finding out the executable files and commands.
106 Q What is java collections? A Java collections is a set of classes, that allows operations on a collection of classes.
107 Q Can we compile a java program without main? A Yes, we can. In order to compile a java program, we don't require any main method. But to execute a java program we must have a main in it (unless it is an applet or servlet). Because main is the starting point of a java program.
108 Q What is a java compilation unit. A
A compilation unit is a java source file.
109 Q What are the restrictions when overriding a method ? A
Overridden methods must have the same name, argument list, and return type (i.e., they must have the exact signature of the method we are going to override, including return type.) The overriding method cannot be less visible than the method it overrides(i.e., a public method cannot be override to private). The overriding method may not throw any exceptions that may not be thrown by the overridden method
110 Q What is static initializer block? What is its use? A
A static initializer block is a block of code that declares with the static keyword. It normally contains the block of code that must execute at the time of class loading. The static initializer block will execute only once at the time of loading the class only.
111 Q How does a try statement determine which catch clause should be used to handle an exception? A
When an exception is thrown , the catch block of the try statement are examined in the order in which they appear. The first catch block that is capable of handling the exception is executed. The remaining catch blocks are ignored
112 Q How parameters are passed to methods in java program ? A
All java method parameters in java are passed by value only. Obviously primitives are passed by value. In case of objects a copy of the reference is passed and so all the changes made in the method will persist.
113 Q If a class doesn't have any constructors, what will happen? A
If a class doesn't have a constructor, the JVM will provide a default constructor for the class.
114 Q What will happen if a thread cannot acquire a lock on an object? A
It enters to the waiting state until lock becomes available.
115 Q How does multithreading occurring on a computer with a single CPU? A
The task scheduler of OS allocates an execution time for multiple tasks. By switching between different executing tasks, it creates the impression that tasks execute sequentially. But actually there is only one task is executed at a time.
116 Q What will happen if you are invoking a thread's interrupt method while the thread iswaiting or sleeping? A
When the task enters to the running state, it will throw an InterruptedException.
117 Q What are the different ways in which a thread can enter into waiting state? A
There are three ways for a thread to enter into waiting state. By invoking its sleep() method, by blocking on I/O, by unsuccessfully attempting to acquire an object's lock, or by invoking an object's wait() method.

118 Q What are the the different ways for creating a thread? A
A thread can be created by subclassing Thread, or by implementing the Runnable interface.
119 Q What is the difference between creating a thread by extending Thread class and by implementing Runnable interface? Which one should prefer? A
When creating a thread by extending the Thread class, it is not mandatory to override the run method (If we are not overriding the run method , it is useless), because Thread class have already given a default implementation for run method. But if we are implementing Runnable , it is mandatory to override the run method. The preferred way to create a thread is by implementing Runnable interface, because it give loose coupling.
120 Q What is coupling? A Coupling is the dependency between different components of a system
121 Q How is an interface? A An interface is a collection of method declarations and constants. In java interfaces are used to achieve multiple inheritance. It sets a behavioral protocol to all implementing classes.
122 Q What is an abstract class? A
An abstract class is an incomplete class. An abstract class is defined with the keyword abstract . We cannot create an object of the abstract class because it is not complete. It sets a behavioral protocol for all its child classes.
123 Q How will you define an interface? A
An interface is defined with the keyword interface. Eg:
public interface MyInterface { }
124 Q How will you define an abstract class? A
An abstract class is defined with the keyword abstract Eg: public abstract class MyClass { }
125 Q What is any an anonymous class? A An anonymous class is a local class with no name.
126 Q What is a JVM heap? A
The heap is the runtime data area from which memory for all class instances and arrays is allocated. The heap may be of a fixed size or may be expanded. The heap is created on virtual machine start-up.
127 Q What is difference between string and StringTokenizer? A
StringTokenizer as its name suggests tokenizes a String supplied to it as an argument to its constructor and the character based on which tokens of that string are to be made. The default tokenizing character is space " ".
128 Q What is the difference between array and ArrayList ? A
Array is collection of same data type. Array size is fixed, It cannot be expanded. But ArrayList is a growable collection of objects. ArrayList is a part of Collections Framework and can work with only objects.
129 Q What is difference between java.lang .Class and java.lang.ClassLoader? What is the hierarchy of ClassLoader ? A
Class 'java.lang.Class'represent classes and interfaces in a running Java application. JVM construct 'Class' object when class in loaded. Where as a ClassLoader is also a class which loads the class files into memory in order for the Java programs to execute properly. The hierarchy of ClassLoaders is:
Bootstrap ClassLoaders
Extensive ClassLoaders
System Classpath ClassLoaders
Application ClassLoaders
130 Q What is daemon thread? A
Theards which are running on the background are called deamon threads. daemon thread is a thread which doesn't give any chance to run other threads once it enters into the run state it doesn't give any chance to run other threads. Normally it will run forever, but when all other non-daemon threads are dead, daemon thread will be killed by JVM
131 Q What is a green thread? A
Native threads can switch between threads preemptively. Green threads switch only

when control is explicitly given up by a thread (Thread.yield(), Object.wait(), etc.) or a thread performs a blocking operation (read(), etc.). On multi-CPU machines, native threads can run more than one thread simultaneously by assigning different threads to different CPUs. Green threads run on only one CPU. Native threads create the appearance that many Java processes are running: each thread takes up its own entry in the process table. One clue that these are all threads of the same process is that the memory size is identical for all the threads - they are all using the same memory. The process table is not infinitely large, and processes can only create a limited number of threads before running out of system resources or hitting configured limits.

132 Q What is volatile variable? A
A volatile variable is not allowed to have a local copy of a variable that is different from the value currently held in "main" memory. Volatile modifier requests the JVM to always access the shared copy of the variable so the its most current value is always read.

133 Q Why java does not support multiple inheritance? A
Because the multiple inheritance causes the redundancy. Also we cannot solve diamond problem.

134 Q What is diamond problem? A
The diamond problem is an ambiguity that can occur when a class multiply inherits from two classes that both descend from a common super class

135 Q How many JVM's we can run in a system? A
Any number of JVMs can run in a system. Whenever we issue the command 'java' a new JVM will start.

136 Q Why Java is not 100% pure object oriented language? A Because java uses primitives.

137 Q Why ArrayList is faster than Vector? A Because Vector is synchronized. Synchronization reduces the performance.

138 Q What is the security mechnaism used in java? A Java uses sand box security model.

139 Q What is sandbox? A
A sandbox is a security mechanism for safely running programs. The sandbox typically provides a tightly-controlled set of resources for guest programs to run in, such as scratch space on disk and memory.

140 Q What is phantom memory? A Phantom memory is the memory that does not exist in reality.

141 Q What is reflection? A
Reflection is the process of finding out the different features of a class dynamically.

142 Q What are the differences between JIT and HotSpot? A
The Hotspot VM is a collection of techniques, the most important of which is called adaptive optimization. The original JVMs interpreted byte codes one at a time. Second-generation JVMs added a JIT compiler, which compiles each method to native code upon first execution, then executes the native code. Thereafter, whenever the method is called, the native code is executed. The adaptive optimization technique used by Hotspot is a hybrid approach, one that combines byte code interpretation and run-time compilation to native code. Hotspot, unlike a regular JIT compiling VM, doesn't do "premature optimization"

143 Q What are the advantages and disadvantages of reference counting in garbage collection?A
An advantage of this scheme is that it can run in small chunks of time closely linked with the execution of the program. These characteristic makes it particularly suitable for real-time environments where the program can't be interrupted for very long time. A disadvantage of reference counting is that it does not detect cycles. A cycle is two or more objects that refer to one another. Another disadvantage is the overhead of incrementing and decrementing the reference count each time. Because of these disadvantages, reference counting currently is out of favor.

144 Q How would you implement a thread pool? A
The ThreadPool class is a generic implementation of a thread pool, which takes the following input Size of the pool to be constructed and name of the class which implements Runnable (which has a visible default constructor) and constructs a thread pool with active threads that are waiting for activation. once the threads have finished processing they come back and wait once again in the pool.
145 Q What is the difference between throw and throws clause? A
throw is used to throw an exception manually, where as throws is used in the case of checked exceptions, to tell the compiler that we haven't handled the exception, so that the exception will be handled by the calling function.
156 Q What is JAR file? A
A JAR file (short for Java Archive) is a ZIP file used to distribute a set of Java classes. It is used to store compiled Java classes and associated metadata that can constitute a program
147 Q What is a classloader? A
A class loader is an object that is responsible for loading classes.
148 Q What is the difference between Comparable and Comparator ? A
The Comparable is for natural ordering and Comparator is for custom ordering. But we can override the compareTo method of comparable interface to give a custom ordering.
149 Q What is the difference between List, Set and Map? A
A Set is a collection that has no duplicate elements. A List is a collection that has an order associated with its elements. A map is a way of storing key/value pairs. The way of storing a Map is similar to two-column table.
150 Q What is the difference between Exception and Error ? A Error is unrecoverable.
151 Q What is meant by Open Source ? A In general, open source refers to any program whose source code is made available for use or modification as users or other developers see fit. Open source software is usually developed as a public collaboration and made freely available.
152 Q How do you send data from an applet to Servlet ? What are the steps involved in it ?A
You can use the java.net.URLConnection and java.net.URL classes to open a standard HTTP connection to the web server. The server then passes this information to the servlet in the normal way. Basically, the applet pretends to be a web browser, and the servlet doesn't know the difference. As far as the servlet is concerned, the applet is just another HTTP client.
153 Q What is polymorphism? A
It is the ability of an object to behave differently on different situations for the same message.
154 Q What is a class, member and local variable? A
Variables declared within a method are local variables. Variables declared within the class are member variables. Variables declared within the class with static modifier are class variables
155 Q How do I convert a numeric IP address like 66.29.36.130 into a hostname like www.javacertificate.net? A
A String hostname = InetAddress.getByName("66.29.36.130").getHostName();
156 Q What is the difference between a constructor and a method? A
A constructor is a member function of a class that is used to create objects of that class. It has the same name as the class itself, has no return type, and is invoked using the new operator. We cannot invoke a constructor directly. A method is an ordinary member function of a class. It has its own name, a return type (which may be void), and is invoked using the dot operator.
157 Q What are the different inner classes types? A
There are mainly four types available. They are Member classes, Nested top-level classes, Local classes,Anonymous classes
158 Q What is Nested top-level classes? A
A class declared within a class with static modifier is called nested top level

class. Any class outside the declaring class can access the nested top level class with the declaring class dot nested top level class. Top-level inner classes have access to static variables only .
159 Q What is Member classes? A
A class declared inside a class without static modifier is called member class. Member classes are just like any other member methods or member variables.
160 Q What is Local inner classes ? A
Local inner classes are class declared inside a block of code. They are visible only within the block of their declaration.
161 Q Can a top level class be private or protected? A
No. A top level class can not be private or protected. It can have either "public" or no modifier.
162 Q How will you invoke any external process in Java? A
By using Runtime.getRuntime().exec(….)
163 Q What is a package? A To group set of classes into a single unit is known as packaging. Packages provides wide namespace visibility.
164 Q What is the use of assert keyword A
Assert keyword validates certain expressions. It replaces the if block effectively and throws an AssertionError on failure. The assert keyword should be used only for critical arguments (means without that the method does nothing).
165 Q What is composition? A
Holding the reference of the other class within some other class is known as composition.
166 Q What is aggregation? A It is a special type of composition. If you expose all the methods of a composite class and route the method call to the composite method through its reference, then it is called aggregation
167 Q What are the methods in Object? A clone, equals, wait, finalize, getClass, hashCode, notify, notifyAll, toString
168 Q What is the relationship between synchronized and volatile keyword? A
The JVM is guaranteed to treat reads and writes of data of 32 bits or less as atomic. For long or double variable, programmers should take care in multi-threading environment. Either put these variables in a synchronized method or block, or declare them volatile.
169 Q What factors are used to decide using synchronized or volatile? A
You can make a variable synchronized or volatile under the following cases: 1) if you are not updating many variables often in a multithread environment, consider using volatile. 2) If you are updating many variables, consider using synchronized, because using volatile might be slower.
170 Q What are the drawbacks of inheritance? A
Since inheritance inherits everything from the super class and interface, it may make the subclass too clustering and sometimes error-prone when dynamic overriding or dynamic overloading in some situation. In addition, the inheritance may make peers hardly understand your code if they don't know how your super-class acts.
171 Q What is the difference between static synchronized and synchronized methods? A
Both are synchronized methods. One is instance method, the other is class method. Method with static modifier is a class method. That means the method belongs to class itself and can be accessed directly with class name and is also called Singleton design. The method without static modifier is an instance method. That means the instance method belongs to its object. Every instance of the class gets its own copy of its instance method.
172 Q What is the purpose of the Runtime class? A
The purpose of the Runtime class is to provide access to the Java runtime system.
173 Q What is the purpose of the System class? A The purpose of the System class is to provide access to system resources.
174 Q Does the code in finally block get executed if there is an exception and a return statement in a catch block? A
If an exception occurs and there is a return statement in catch block, the finally

block is still executed. The finally block will not be executed when the System.exit(1) statement is executed earlier or the system shut down earlier or the memory is used up earlier before the thread goes to finally block.
175 Q Considering notepad/IE or any other thing as process, What will happen if you start notepad or IE 3 times? Where 3 processes are started or 3 threads are started ? A
3 processes will start.
176 Q What are the restrictions placed on the values of each case of a switch statement?
At compile time, each case values of switch statement must evaluate to a an int value.
177 Q If aaaa is an array then why aaaa.length why not aaaa.length()? A Because length is a property not a method. 178 Q What is dynamic typing? A
Dynamic typing means type errors are detected at run time by checking the actual data types of the values against the required data types
179 Q What is static typig? A
Static typing means type errors are detected at compile time by checking the inferred data type is a subtype of the required type
180 Q What is HashMap and Map? A
Map is Interface and HashMap is class that implements that.
181 Q What is an Object and how do you allocate memory to it? A
Object is an instance of a class and it is a software unit that combines a structured set of data with a set of operations for inspecting and manipulating that data. When an object is created using new operator, memory is allocated to it.
182 Q What is UNICODE? A
Unicode is used for internal representation of characters and strings and it uses 16 bits to represent each other.
183 Q What is adapter class? A
An adapter class provides a default implementation of all methods in an event listener interface. Adapter classes are useful when you want to process only some of the events that are handled by a particular event listener interface. You can define a new class by extending one of the adapter classes and implementing only those events relevant to us.
184 Q What is a stream and what are the types of Streams and classes of the Streams?A
A stream is a flow of data from one direction to another. . There are two types of Streams Byte Streams: Provide a convenient means for handling input and output of bytes. And Character Streams: Provide a convenient means for handling input & output of characters.
185 Q What is the difference between TCP/IP and UDP? A
TCP/IP is a two-way communication between the client and the server and it is a reliable and there is a confirmation regarding reaching the message to the destination. UDP is a one-way communication only between the client and the server and it is not a reliable and there is no confirmation regarding reaching the message to the destination.
186 Q What is Inter-Thread communication? A Exchange of information between two threads.
187 Q What is a policy? A
It's an abstract class for representing the system security policy for a Java application environment (specifying which permissions are available for code from various sources). Java security properties file resides in <JAVA-HOME>/lib/security/java.security directory.
188 Q What is a thread group? A
A thread group is a data structure that controls the state of collection of thread as a whole managed by the particular runtime environment.
189 Q Why is UTFDataFormatException thrown by DataOutputStream.writeUTF() when serializing a String? A

DataOutputStream.writeUTF() does not support writing out strings larger than 64K. The first two bytes of a UTF string in the stream are the length of the string. If a java.lang.String is larger than 64K, it needs to be stored in the stream by an alternative method rather than depending on the default method of storing a String in the stream, writeUTF.
190 Q Why is OutOfMemoryError thrown after writing a large number of objects into an ObjectOutputStream? A
The ObjectOutputStream maintains a table mapping objects written into the stream to a handle. The first time an object is written to a stream, its contents are written into the stream; subsequent writes of the object result in a handle to the object being written into the stream. This table maintains references to objects that might otherwise be unreachable by an application, thus, resulting in an unexpected situation of running out of memory. A call to the ObjectOutputStream.reset() method resets the object/handle table to its initial state, allowing all previously written objects to be eligible for garbage collection.
191 Q How can I get the serialVersionUID of a class? A By running the serialver tool with the name of the class as the command line argumet, as shown in the example that follows:serialver java.lang.String 192 Q What is serialVersionUID ? A

The serialVersionUID is a universal version identifier for a Serializable class. Deserialization uses this identifier number to ensure that a loaded class corresponds to a serialized object.
193 Q What is abstraction? A
An abstraction is an idea, concept, or word which defines the phenomena which make up the concrete events or things which the abstraction refers to, the referents.
194 Q What is encapsulation? A
Encapsulation describes the ability of an object to hide its data and methods from the rest of the world
195 Q What is inheritance? A
Inheritance is the ability to create new classes based on existing classes. It is useful to reuse existing code.

SWING/AWT interview questions.
1 Q What is JFC?
A JFC stands for Java Foundation Classes. The Java Foundation Classes (JFC) are a set of Java class libraries provided as part of Java 2 Platform, Standard Edition (J2SE) to support building graphics user interface (GUI) and graphics functionality for client applications that will run on popular platforms such as Microsoft Windows, Linux, and Mac OSX.
2 Q What is AWT?
A AWT stands for Abstract Window Toolkit. AWT enables programmers to develop Java applications with GUI components, such as windows, and buttons. The Java Virtual Machine (JVM) is responsible for translating the AWT calls into the appropriate calls to the host operating system.
3 Q What are the differences between Swing and AWT?
A AWT is heavy-weight components, but Swing is light-weight components. AWT is OS dependent because it uses native components, But Swing components are OS independent. We can change the look and feel in Swing which is not possible in AWT. Swing takes less memory compared to AWT. For drawing AWT uses screen rendering where Swing uses double buffering.
4 Q What are heavyweight components ?
A A heavyweight component is one that is associated with its own native screen resource (commonly known as a peer).
5 Q What is lightweight component?
A A lightweight component is one that "borrows" the screen resource of an ancestor (which means it has no native resource of its own -- so it's "lighter").

6 Q What is double buffering ?
A Double buffering is the process of use of two buffers rather than one to temporarily hold data being moved to and from an I/O device. Double buffering increases data transfer speed because one buffer can be filled while the other is being emptied.
7 Q What is an event?
A Changing the state of an object is called an event.
8 Q What is an event handler ?
A An event handler is a part of a computer program created to tell the program how to act in response to a specific event.
9 Q What is a layout manager?
A A layout manager is an object that is used to organize components in a container.
10 Q What is clipping?
A Clipping is the process of confining paint operations to a limited area or shape.
11 Q Which containers use a border Layout as their default layout?
A The window, Frame and Dialog classes use a border layout as their default layout.
12 Q What is the preferred size of a component?
A The preferred size of a component is the minimum component size that will allow the component to display normally.
13 Q What method is used to specify a container's layout?
A The setLayout() method is used to specify a container's layout.

14 Q Which containers use a FlowLayout as their default layout?
A The Panel and Applet classes use the FlowLayout as their default layout.
15 Q Which method of the Component class is used to set the position and size of a component?
A setBounds
16 Q What is the difference between invokeAndWait() and invokeLater()?
A invokeAndWait is synchronous. It blocks until Runnable task is complete. InvokeLater is asynchronous. It posts an action event to the event queue and returns immediately. It will not wait for the task to complete
17 Q Why should any swing call back implementation execute quickly?
A Callbacks are invoked by the event dispatch thread. Event dispatch thread blocks processing of other events as long as call back method executes.

18 Q What is an applet?
A Applet is a java program that runs inside a web browser.
19 Q What is the difference between applications and applets?
A Application must be run explicitly within Java Virtual Machine whereas applet loads and runs itself automatically in a java-enabled browser. Application starts execution with its main method whereas applet starts execution with its init method. Application can run with or without graphical user interface whereas applet must run within a graphical user interface. In order to run an applet we need a java enabled web browser or an appletviewer.
20 Q Which method is used by the applet to recognize the height and width?
A getParameters().
21 Q When we should go for codebase in applet?
A If the applet class is not in the same directory, codebase is used.

22 Q What is the lifecycle of an applet?
A init( ) method - called when an applet is first loaded
start( ) method - called each time an applet is started
paint( ) method - called when the applet is minimized or maximized
stop( ) method - called when the browser moves off the applet's page

destroy( ) method - called when the browser is finished with the applet

23 Q Which method is used for setting security in applets?
A setSecurityManager
24 Q What is an event and what are the models available for event handling?
A Changing the state of an object is called an event. An event is an event object that describes a state of change. In other words, event occurs when an action is generated, like pressing a key on keyboard, clicking mouse, etc. There different types of models for handling events are event-inheritance model and event-delegation model
25 Q What are the advantages of the event-delegation model over the event-inheritance model?
A Event-delegation model has two advantages over event-inheritance model. a)Event delegation model enables event handling by objects other than the ones that generate the events. This allows a clean separation between a component's design and its use. b)It performs much better in applications where many events are generated. This performance improvement is due to event-delegation model does not have to be repeatedly process unhandled events as is the case of the event-inheritance.
26 Q What is source and listener ?
A A source is an object that generates an event. This occurs when the internal state of that object changes in some way. A listener is an object that is notified when an event occurs. It has two major requirements. First, it must have been registered with a source to receive notifications about specific event. Second, it must implement necessary methods to receive and process these notifications.
27 Q What is controls and what are different types of controls in AWT?
A Controls are components that allow a user to interact with your application. AWT supports the following types of controls: Labels, Push Buttons, Check Boxes, Choice Lists, Lists, Scrollbars, Text Components. These controls are subclasses of Component.
28 Q What is the difference between choice and list?
A A Choice is displayed in a compact form that requires you to pull it down to see the list of available choices and only one item may be selected from a choice. A List may be displayed in such a way that several list items are visible and it supports the selection of one or more list items.
29 Q What is the difference between scrollbar and scrollpane?
A A Scrollbar is a Component, but not a Container whereas Scrollpane is a Container and handles its own events and perform its own scrolling.
30 Q What is a layout manager and what are different types of layout managers available?
A A layout manager is an object that is used to organize components in a container. The different layouts are available are FlowLayout, BorderLayout, CardLayout, GridLayout , GridBagLayout, Boxlayout and SpringLayout
31 Q How are the elements of different layouts organized?
A The elements of a FlowLayout are organized in a top to bottom, left to right fashion. The elements of a BorderLayout are organized at the borders (North, South, East and West) and the center of a container. The elements of a CardLayout are stacked, on top of the other, like a deck of cards. The elements of a GridLayout are of equal size and are laid out using the square of a grid. The elements of a GridBagLayout are organized according to a grid. However, the elements are of different size and may occupy more than one row or column of the grid. In addition, the rows and columns may have different sizes. It is the most flexible layout.
32 Q What are types of applets?
A There are two different types of applets. Trusted Applets and Untrusted applets. Trusted Applets are applets with predefined security and Untrusted Applets are applets without any security.

33 Q What are the restrictions imposed by a Security Manager on Applets?
A Applets cannot read or write files on the client machine that's executing it. They cannot load libraries or access native libraries. They cannot make network connections except to the host that it came from. They cannot start any program on the client machine. They cannot read certain system properties. Windows that an applet brings up look different than windows that an application brings up.
34 Q What is the difference between the Font and FontMetrics classes?
A The FontMetrics class is used to define implementation-specific properties, such as ascent and descent, of a Font object.
35 Q What is the relationship between an event-listener interface and an event-adapter class?
A An event-listener interface defines the methods that must be implemented by an event handler for a particular kind of event. An event adapter provides a default implementation of an event-listener interface.
36 Q How can a GUI component handle its own events?
A A component can handle its own events by implementing the required event-listener interface and adding itself as its own event listener.
37 Q What is the difference between the paint() and repaint() methods?
A The paint() method supports painting via a Graphics object. The repaint() method is used to cause paint() to be invoked by the AWT painting thread.
38 Q What interface is extended by AWT event listeners?
A All AWT event listeners extend the java.util.EventListener interface.

39 Q What is Canvas ?
A Canvas is a Component subclass which is used for drawing and painting. Canvas is a rectangular area where the application can draw or trap input events.

40 Q What is default Look-and-Feel of a Swing Component?
A Java Look-and-Feel.
41 Q What are the features of JFC?
A Pluggable Look-and-Feel, Accessibility API, Java 2D API, Drag and Drop Support
42 Q What does x mean in javax.swing?
A Extension of java.
43 Q What are invisible components?
A They are light weight components that perform no painting, but can take space in the GUI. This is mainly used for layout management.
44 Q What is the default layout for a ContentPane in JFC?
A BorderLayout.
45 Q What does Realized mean?
A Realized mean that the component has been painted on screen or that is ready to be painted. Realization can take place by invoking any of these methods. setVisible(true), show() or pack().
46 Q What is difference between Swing and JSF?
A The key difference is that JSF runs on server. It needs a server like Tomcat or WebLogic or WebSphere. It displays HTML to the client. But Swing program is a stand alone application.
47 Q Why does JComponent class have add() and remove() methods but Component class does not?
A JComponent is a subclass of Container and can contain other components and JComponents.
48 Q What method is used to specify a container's layout?
A The setLayout() method is used to specify a container's layout.

49 Q What is the difference between AWT and SWT?
A SWT (Standard Widget Toolkit) is a completely independent Graphical

User Interface (GUI) toolkit from IBM. They created it for the creation of Eclipse Integrated Development Environment (IDE). AWT is from Sun Microsystems.

50 Q What is the difference between JFC & WFC?
A JFC supports robust and portable user interfaces. The Swing classes are robust, compatible with AWT, and provide you with a great deal of control over a user interface. Since source code is available, it is relatively easy to extend the JFC to do exactly what you need it to do. But the number of third-party controls written for Swing is still relatively small.
WFC runs only on the Windows (32-bit) user interface, and uses Microsoft extensions to Java for event handling and ActiveX integration. Because ActiveX components are available to WFC programs, there are theoretically more controls available for WFC than for JFC. In practice, however, most ActiveX vendors do not actively support WFC, so the number of controls available for WFC is probably smaller than for JFC. The WFC programming model is closely aligned with the Windows platform.
51 Q What is a convertor?
A Converter is an application that converts distance measurements between metric and U.S units.
52 Q What is the difference between a Canvas and a Scroll Pane?
A Canvas is a component. ScrollPane is a container. Canvas is a rectangular area where the application can draw or trap input events. ScrollPane implements horizontal and vertical scrolling.
53 Q What is the purpose of the enableEvents() method?
A The enableEvents() method is used to enable an event for a particular object. Normally, an event is enabled when a listener is added to an object for a particular event. The enableEvents() method is used by objects that handle events by overriding their event-dispatch methods.
54 Q What is the difference between a MenuItem and a CheckboxMenuItem?
A The CheckboxMenuItem class extends the MenuItem class to support a menu item that may be checked or unchecked.
55 Q Which is the super class of all event classes?
A The java.awt.AWTEvent class is the highest-level class in the AWT event-class hierarchy.
56 Q How the Canvas class and the Graphics class are related?
A A Canvas object provides access to a Graphics object via its paint() method.
57 Q What is the difference between a Window and a Frame?
A The Frame class extends Window to define a main application window that can have a menu bar. A window can be modal.
58 Q What is the relationship between clipping and repainting?
A When a window is repainted by the AWT painting thread, it sets the clipping regions to the area of the window that requires repainting.
59 Q What advantage do Java's layout managers provide over traditional windowing systems?
A Java uses layout managers to lay out components in a consistent manner across all windowing platforms. Since Java's layout managers aren't tied to absolute sizing and positioning, they are able to accommodate platform-specific differences among windowing systems.
60 Q When should the method invokeLater() be used?
A This method is used to ensure that Swing components are updated through the event-dispatching thread.