1. **Why do threads block on I/O?**

Thread gets blocked just because when two threads try to access the single resource simultaneously the threads get blocked and when one thread is using the resource other should be put to sleep state because when the thread which is in processing produces the result only then the resource is allowed to another thread.

1. **How are Observer and Observable used?**

**Observer:** object that wants to be notified when the state of another object changes  
**Observable:** Object whose state is of interest to another object.  
These two classes are suitable for a system in which objects need to be automatically notified of changes that occur in other objects.

1. **What is synchronization and why is it important?**

Java supports multiple threads to be executed. This may cause two or more threads to access the same fields or objects. Synchronization is a process which keeps all concurrent threads in execution to be in synch. Synchronization avoids memory consistence errors caused due to inconsistent view of shared memory. When a method is declared as synchronized; the thread holds the monitor for that method's object If another thread is executing the synchronized method, your thread is blocked until that thread releases the monitor.

1. **Can a lock be acquired on a class?**

In class level the most exclusive lock can be achieved by synchronising the class's class object and declaring it static.

1. **What's new with the stop(), suspend() and resume() methods in JDK 1.2?**

The stop(), suspend() and resume() methods have been deprecated in JDK 1.2.

1. **Is null a keyword?**

No, null is not a keyword.

1. **What is the preferred size of a component?**

The preferred size of a component is the minimum component size that will allow thecomponent to display normally.

1. **What method is used to specify a container's layout?**

The setLayout() method is used to specify a container's layout.

1. **Which containers use a Flow Layout as their default layout?**

The Panel and Applet classes use the FlowLayout as their default layout.

1. **What state does a thread enter into when it terminates its processing?**

Terminated

1. **What is the Collections API?**

Collections are like containers that groups multiple items in a single unit. For example; a jar of chocolates, list of names etc. Collections are used almost in every programming language and when Java arrived, it also came with few Collection classes**; Vector, Stack, Hashtable, Array.** Java 1.2 provided **Collections Framework** that is architecture to represent and manipulate Collections in java in a standard way. Java Collections Framework consists of following parts:

1. **Which characters may be used as the second character of an identifier, but not as the first character of an identifier?**

The digits 0 through 9 may not be used as the first character of an identifier but they maybe used after thefirst character of an identifier.

1. **What is the List interface?**
2. List<E>: models aresizable linear array, which allows *indexed access*. List can contain duplicate elements. Frequently-used implementations of List include ArrayList, LinkedList, Vector and Stack.
3. **How are integer overflows and underflows handled in JAVA?**

Arithmetic integer operations are performed in 32-bit precision. When the resultant value of an operation is larger than 32 bits (the maximum size an int variable can hold) then the low 32 bits only taken into consideration and the high order bits are discarded. When the MSB (most significant bit) is 1 then the value is treated as negative.

1. **What is a Vector class?**

Vector implements a dynamic array. Vector proves to be very useful if you don't know the size of the array in advance or you just need one that can change sizes over the lifetime of a program.

1. **What modifiers may be used with an inner class that is a member of an outer class?**

A (non-local) inner class may be declared as public, protected, private, static, final, or abstract.

1. **What is an Iterator interface?**
2. Iterators are used in [Collection framework](https://www.geeksforgeeks.org/collections-in-java-2/) in Java to retrieve elements one by one. There are three iterators.
3. **What is the difference between the >> and >>> operators?**

>> is arithmetic shift right, >>> is logical shift right.

1. **Which method of the Component class is used to set the position and size of a component?**

SetBounds()

1. **Differentiate between yielding and sleeping.**

Thread.sleep() method is overloaded in Java as sleep(long milliseond) and sleep(long millis, int nanos) . former version of sleep will stop current thread for specified millisecond while later version of sleep allows to specify sleep duration till nanosecond. Thread.sleep() will cause currently executing thread to stop execution and relinquish the CPU to allow Thread scheduler ot allocate CPU to another thread or same thread depends upon Thread scheduler. Thread.yield() also used to relinquish CPU but behavior of sleep() is more determined than yield across platform. Thread.sleep(1) is better option than calling Thread.yield for same purpose.

1. **Which java util classes and interfaces support event handling?**

The EventObject class and the EventListener interface support event processing.s

1. **What are wrapped classes?**

A Wrapper class is a class whose object wraps or contains a primitive data types. When we create an object to a wrapper class, it contains a field and in this field, we can store a primitive data types. In other words, we can wrap a primitive value into a wrapper class object.

1. **Does garbage collection guarantee that a program will not run out of memory?**

Garbage collection does not guarantee that a program will not run out of memory. It ispossible for programs to use up memory resources faster than they are garbage collected.It is also possible for programs to create objects that are not subject to garbage collection

1. **What restrictions are placed on the location of a package statement within a source code file?**

A package statement must appear as the first line in a source code file (excluding blanklines and comments).

1. **Can an object's finalize() method be invoked while it is reachable?**

An object's finalize() method cannot be invoked by the garbage collector while the objectis still reachable. However, an object's finalize() method may be invoked by otherobjects.

1. **What is the immediate superclass of the Applet class?**

The immediate superclass of Applet is **Panel**.

1. **Differentiate between preemptive scheduling and time slicing.**

Preemptive scheduling enables the highest priority task execution until waiting or dead states entered. It also executes, until a higher priority task enters.  
  
Time slicing allows a task to execute for a stipulated time slice and then reenters the pool of ready tasks. At that time the scheduler determines the executable task, based on the priority and various other tasks.

1. **Name three Component subclasses that support painting.**

The Canvas, Frame, Panel, and Applet classes support painting.

1. **What value does readLine() return when it reaches the end of a file?**

The readLine() method returns null when it has reached the end of a file.

1. **What is the immediate superclass of the Dialog class?**

Window

1. **What is clipping?**

Clipping is restricting of drawing to a certain area. This is done for efficiency reasons and to create various effects. When working with the clip, we must either work with a copy of the Graphics object or to restore the original clip attribute. Changing the clip does not affect existing pixels; it affects future rendering only.

1. **What is a native method?**

A **native method** is a Java **method** (either an instance **method** or a class **method**) whose implementation is written in another programming language such as C.

1. **Can a for statement loop indefinitely?**

Yes

1. **What are order of precedence and associativity, and how are they used?**

Operator precedence determines the way in which operators are parsed with respect to each other. Operators with higher precedence become the operands of operators with lower precedence.

Associativity determines the way in which operators of the same precedence are parsed.

1. **When a thread blocks on I/O, what state does it enter?**

A thread enters the waiting state when it blocks on I/O.