**Prerequisite-**

* Citi prefers to have a resource with **Java 6** background, though its advisable that you should be aware with all latest trends in java and spring and can share it in introduction scenario.
* Technology you should be aware to the fullest are- Core java(Multithreading and collections are must), Spring, JSP, servlets, Database knowledge and hibernate. You can consider priority in same order as core java having the highest priority.

**Questions from Multithreading-**

* What are the new features introduced in java 6 for collection framework to have a better synchronization🡪 ConcurrentNavigableMap(its advantages),CopyOnWriteArrayList, CopyOnWrite-ArraySe is expected. It also comes under collection part.
* Callable and Future.
* Thread Synchronization – expected the working of synchronized block and methods
* Static vs Non-Static synchronization / locking.
* All methods of thread. Join, wait Notify, Notify all are mostly preferred.
* Use of Volatile keyword
* Immutability of objects – All aspects of immutable class and defensive copying.
* Real life scenarios where thread priority, concurrency and thread pooling is asked in tricky manner

**Questions in collection –**

* Why to have an immutable class as a key in maps.
* Internal working of a Map like bucket, indexed table, hashcode, load factor, initial capacity, Null members etc.
* Difference between ArrayList, linkedlist and Vector
* Treeset, Hashset differences and internal functionality.
* Use of Collections (class) utility.
* Use of sorting techniques like comparable, comparator etc.
* Why to have equal and hashcode method overrides.
* what is the use of **final** keyword.
* What does below statement imply.(Internally how does it work with and without final keyword )

final Emp e= new Emp();

why do we need to create immutable class. Why is String immutable?

2 tables emp and dept. Retrieve number of employees per department.

**Questions from java.lang.String**

* StringBuilder and StringBuffer usage
* Scenario based questions like
  + There is a file with some text in it. How to count the total no of Lines, words it.
  + How to count the repeated words in a file.
* String formatting and immutable aspect of String

**JDBC**

* Difference between statements of JDBC.
* Advantage of having Hibernate over JDBC and also possible sql injection security attacks.
* Mostly Callable statement, Scrollable result-set transaction management etc.

**Miscellaneous**:

* Various core java tricky questions and scenario based questions.
* Volatile and transient
* Atomic variables in synchronization.
* DateTime, Gregorian Calendar etc.

**Questions from Spring**

* What is IOC and DI?
* What are the Modules you worked till now- MVC being the important- explain the flow from first request to response serving.
* Integration of REST and Spring.
* Integration of Spring and Hibernate
* Spring Security module- Authentication flow.
* Spring AOP- flow and use.

**Questions from database-**

* Expect a very basic question on Joins.
* Primary, Unique and foreign keys
* Difference in procedure and function.
* Use of triggers.
* Scenario based- How you will have a periodic back up of tables.

**A sample List of questions asked by client during an interview:**

1. Difference between Array list and Linkedlist?

2. Please explain any difficult situation in your project and how to handle?

3. Explain Serialization and Deserialization?

4. Scenario: Suppose I have your CV and i need to calculate total count of JAVA word and total count of world in your CV how to do it?

5. Explain Singleton pattern?

6. Internal working of HashMap?

7. How to calculate total count of users are visited to your website?

8. How to do it table backup (reflection) on particular time in SQL server?

9. Explain Generic feature?

10. Explain Threading Pool in Executor framework?

11. Scenario: Suppose 10 threads process parallel if one thread is stop because of some exception all threads will stop automatically also if same thread is start all threads will be start how to do it?

12. Scenario: Suppose at time of xml parsing if you read name(in short form) ‘kk’ then in database you will write Kiran kumar how to do it?

13. Difference between DOM and SAX parser?

14. Why we will go with Hibernate if Jdbc already available?

15. Explain second level Cache?