**JAVA Interview Questions**

**Java Fundamentals:**

**JVM:**

1. Difference between JVM, JRE & JDK
2. Why java is called as platform independent?
3. How Garbage Collection works in Java & how to instruct JVM to run Garbage Collection?
4. What is the main disadvantage of Garbage Collection and how it can be minimized?

**Class Loaders:**

1. What is a class loader?
2. Types of Class Loaders?
3. Usage of each class loader.
4. What is early loading and lazy loading?
5. Usage of Just In Time Compiler?

**Memory Management:**

1. What are the different types of memories that are used by JVM, and their purposes?
2. Heap Vs Stack. Which kinds of data structures are stored in which type?

**OOPs Concepts:**

1. What is difference between object oriented programming language and object based programming language?
2. What is the purpose of default constructor?
3. Does constructor return any value?
4. Why main method is static? Can we execute a program without main() method?
5. Example of overloading. What if only the return types are changed?
6. Difference between method Overloading and Overriding.

**Programming Fundamentals:**

1. Describe scenarios where to use String, StringBuffer & StringBuffer.
2. Describe scenarios where to use Vector, ArrayList & LinkedList.
3. Is there any way to use an object as a key in HashMap? If yes, how?
4. Can you access non static variable in static context? Why?
5. What will happen if you call return statement or System.exit on try or catch block ? will finally block execute?
6. Can you override private or static method in Java ?

**Collections:**

1. If some order needs to be maintained in a Map, which Map Implementation should be used?
2. What is the difference between Collection and Collections?
3. What is the difference between List and Set?
4. When it is mandatory that you override the equals method?

**Multi-Threading:**

1. Difference between preemptive scheduling and time slicing?
2. How to share a variable between multiple threads.
3. Is it possible to start a thread twice?
4. Scenario where you have 3 threads sat T1, T2 & T3, where they are doing independent task and you need to start all 3 threads, but T2 is dependent upon T3. How you will make sure that T3 is completed before T2 gets started?
5. What is the difference between notify() and notifyAll()? With scenarios when these can be used?

**Web Services:**

1. What is RESTful web services?
2. What is the difference between SOAP and REST web services?
3. How implement a REST Client in java?

**DB / SQL:**

1. What are the steps to connect to the database in java?
2. What are the JDBC statements? Difference between Statement and PreparedStatement interface?
3. How can we execute stored procedures and functions?
4. What are the different usages of SQL?
5. What are the subsets of SQL? Examples of each.
6. What is view in SQL?
7. What are the different types of joins in SQL?
8. What are set operators in SQL?
9. Write an SQL query to get third maximum salary of an employee from a table named employee\_table.
10. What is the difference between DELETE and TRUNCATE statement in SQL?

**General Awareness:**

1. When Generics was introduced in java? What are its advantages?
2. Key differences between Java 5 and onwards
3. What kind of XML parsers known. Advantages and disadvantages.
4. SVN/GIT etc.
5. Build process (ANT/MAVEN)
6. Agile Methodology

**Design Patterns:**

1. What are Design patterns with respect to java? What is their importance?
2. Name types of Design Patterns?
3. List some of the design patterns in java; explain few of them with examples.
4. What is the difference between factory and abstract factory pattern?
5. What is Singleton pattern? How to implement your own? What are its main constraints? Is it better to make whole method synchronized or only critical section synchronized, why? (Use of Enum etc).
6. What is Gang of Four (GOF)?