Q1) Write the difference between JRE, JDK, and JVM?

Ans: **JDK (Java Development Kit)**

- it is used to develop applications in Java,
- It includes JRE & Development Kit as Compiler (javac), an archiver (jar) and many more.
- It is primarily used for Executing the source code.
- It is Platform Dependent, for different platforms different JDK is required.

JRE (Java Runtime Environment)

- it is the implementation of JVM
- is defined as a software package that provides Java class libraries, along with JVM
- it is mainly responsible for creating an environment for code execution.
- Like JDK it is also Platform Dependent.

JVM (Java Virtual Machine)

- it executes the Java Byte code i.e. (.class) files.
- It is responsible to provide implementations to JRE.
- It is Platform independent. We can implement it on any OS like Mac, or Linux.
- It detects malicious code, it provides security to the Application.

Q2) Write the difference between JSE, JEE, and JME?

Ans: We have 3 editions of Java

1. **Java Standard Edition (J2SE)** : It is the core Java platform, it is a specification, which contains the core libraries to develop standalone, networking, database, GUI, and multithreaded types of applications. In addition to the core API, the Java SE platform consists of the virtual machine.

2. **Java Enterprise Edition (J2EE)** : The Java EE Platform provides an API and runtime environment for developing and running large-scale, multi-tiered, scalable, reliable, and secure network application.

3. **Java Micro Edition (J2ME)** : it is a subset of Java SE, designed to used for micro-devices and embedded development like mobile phones , Arduino chips , TV set-top boxes and so on.

Q3) How does java achieve platform independency?

Ans : Java achieved platform independency because of Byte Code & JVM, which can be run on any Platform like macOS, Linux, or Windows, to run Byte code you just need JVM.

Q4) What are the features of Java and explain them?

Ans:

- Simple:- Java is easy to learn and its syntax is quite simple, clean and easy to understand.
- Object-Oriented:- Java is object-oriented, it supports all the OOPS characteristics. This makes java applications easy to develop and maintain, compared to structured programming language. Portable and Platform
- Independent:- Java source code is compiled and converted into bytecode. this bytecode can run on multiple platforms i.e. Write Once and Run Anywhere(WORA), we can compile the java code in one Operating System and execute it on another Operating System.
- Secure:- JAVA has provided an implicit component inside JVM in the form of a "Security Manager" to provide implicit security against malicious code. Java has provided very good predefined implementations for almost all well-known network security. JAVA has provided a separate middleware service in JAAS [Java Authentication and Authorization Service], which provides web security. Auth, SSO.
- Robust:- Robust means strong. Java is having a very good memory management system in the form of a heap memory management system, it is a dynamic memory management system, it allocates and deallocates memory for the objects at runtime. JAVA is having very good Exception Handling mechanisms, because, Java has provided a very good predefined library to represent and handle almost all the frequently generated exceptions in java applications.
- Multithreaded:- Java supports multithreading to enhance performance. by using this we can execute multiple functionalities simultaneously.

Q5) Write a Java Application which prints your details?

Ans:

```
package com.krsna;

public class Demo {

	public static void main(String[] args) {
		System.out.println("Name : Vishal Singh");
		System.out.println("Father`s Name : Kunwar A.K Singh"
				+ "\n"
				+ "Mother`s Name : Sunita Singh");
		System.out.println("Age : 27"
				+ "\n"
				+ "Gender : Male"
				+ "\n"
				+ "Address : Asansol ,WB"
				+ "\n"
				+ "Mobile No : 9012345678");
	}
}
```