1. Give a brief history of Java.

Java have been developed in 1991, it is relatively a new programming language. At that time, James Arthur Gosling from Sun Microsystem and his team began designing the first version of Java aimed at programming home appliances which are controlled by a wide variety of computer processors.

Gosling’s new language needed to be accessible by a new variety of computer processors. In 1994, he realized that such a language would be ideal for use with web browsers and Java’s connection to the internet began. In 1995, Netscape Inc. released its latest version of the Netscape browser which was capable of running Java programs.

It is called Java because it is customary for the creator of the programming language to the name language anything he/she chooses. The original name of this language was Oak. As the story goes, after many hours of trying to come up with a new name, the development team went out for coffee and the name Java was born.

While Java is viewed as a programming language to design applications for the Internet, it is in reality a general all purpose language which can be used independent of the Internet.

1. How is Java platform independent?

A platform is anything on which a program is run. Platform is either the machine itself, or a primitive kernel or a fully developed OS. Languages can be platform independent of dependent.

Dependent means its executable code and source code varies from platform to platform. That is to say that the programmer has to make some changes in the code if it has to run on other platform. Languages like C are platform dependent.

Platform independent means that the code remains irrespective of the platform to platform involved. Java has something called a virtual machine called JVM (Java Virtual Machine). What happens in case of Java is that the JVM once installed on any platform like windows OS X can run the java code without any alteration. The JVM acts like a virtual platform which the code is executed. As the platform being JVM remains constant throughout all platforms java programs can run only any platform irrespective of the real platform.

Java source code written in the high level java is the first converted to something called the java byte code. This byte code is not readable by the original platform, but only the JVM can read it and then it executes it. This is the primary reason why Java is much in use even today.

1. Differentiate a JDK, JRE, and JVM.

Java Development Kit (JDK) is a software development environment for developing Java applications and applets. It includes the Java Runtime Environment(JRE), an interpreter/loader (java), a compiler (javac), an archiver (jar), a documentation generator (javadoc) and other tools needed in Java development.

Java Runtime Environment (JRE) is a set of software tools for development of Java applications. IT combines the Java Virtual Machine (JVM), platform core classes and supporting libraries. JRE is part of JDK but can be downloaded separately.

Java Virtual Machine (JVM) is an abstract computing machine that enables a computer to run a Java program. There are three notions of the JVM: specification, implementation, and instance. The specification is a document that formally describes what is required of a JVM implementation.

1. Why is the main method declared static?

This is necessary because main() is called by the JVM before any objects are made. Since it is static it can be directly invoked via the class. Similarly, we use static sometime fir user define methods so that we need not to make objects. Void indicate that the main() method being declared does not return value.

1. Is Java purely object-oriented? Explain.

NO, because it supports Primitive data types such as int, byte, long etc.,, to be used, which are not objects. Contrast with a pure OOP language like Smalltalk, where there are no primitive types, and Boolean, int and methods are all objects.