1) What is JAVA? What are the features of JAVA? Name of the Java IDE's?

Java is a multi-platform, object-oriented, and network-centric language. It is among the most used programming language.

Features:

- Object-Oriented
- Platform independent (Write once run anywhere)
- Compiled and interpreted
- Multi-Threaded
- Robust and Secure
- High Performance

Java IDE's:

- Eclipse
- Netbeans
- Intellij Idea

2) What is a Class? What is meant by the Local variable and the Instance variable?

A class is a user defined blueprint or prototype from which objects are created. It represents the set of properties or methods that are common to all objects of one type.

Local variable:

A variable defined within a block or method or constructor is called local variable.

Instance variable:

Instance variables are non-static variables and are declared in a class outside any method, constructor or block.

3) What are the OOPs concepts? Explain about Public and Private access specifiers.

Object-Oriented Programming System (OOPs) is a programming concept that works on the principles of abstraction, encapsulation, inheritance, and polymorphism. It allows users to create objects they want and create methods to handle those objects. The basic concept of OOPs is to create objects, re-use them throughout the program, and manipulate these objects to get results.

Public specifier:

- The public access modifier is specified using the keyword public.
- Classes, methods, or data members that are declared as public are accessible from everywhere in the program.

Private specifier:

- The private access modifier is specified using the keyword private.
- The methods or data members declared as private are accessible only within the class in which they are declared.
- Any other class of the same package will not be able to access these members.

4) How many types of memory areas are allocated by JVM?

The memory in the JVM divided into 5 different parts:

1. Class(Method) Area
2. Heap
3. Stack
4. Program Counter Register
5. Native Method Stack

5) What is the platform? What gives Java its 'write once run anywhere' nature?

A computing platform is the environment in which a piece of software is executed. It may be the hardware or the operating system (OS), even a web browser and associated application programming interfaces, or other underlying software, as long as the program code is executed with it.

In Java, the program is not converted to code directly understood by Hardware, rather it is converted to bytecode(.class file), which is interpreted by JVM, so once compiled it generates bytecode file, which can be run anywhere (any machine) which has JVM(Java Virtual Machine) and hence it gets the nature of Write Once and Run Anywhere.

6) What are the various access specifiers in Java? What is an object?

Access modifiers in Java helps to restrict the scope of a class, constructor, variable, method, or data member. There are four types of access modifiers available in java:

1) Default – No keyword required
2) Private
3) Protected
4) Public

Object :

Object is an instance of a class. An object in OOPS is nothing but a self-contained component which consists of methods and properties to make a particular type of data useful. For example, color, name, table, bag, barking. When you send a message to an object, you are asking the object to invoke or execute one of its methods as defined in the class.

7) List any five features of Java.
   - Object-Oriented
   - Platform independent (Write once run anywhere)
   - Compiled and interpreted
   - Multi-Threaded
   - Robust and Secure
   - High Performance

8) What is a Local variable? List the three steps for creating an Object for a class.

Local variable:

A variable defined within a block or method or constructor is called local variable.

An object is created from a class using the new keyword. There are three steps when creating an object from a class:

a. Declaration − A variable declaration with a variable name with an object type.
b. Instantiation − The 'new' keyword is used to create the object.
c. Initialization − The 'new' keyword is followed by a call to a constructor. This call initializes the new object.

9) What is called Loops in Java? What are the three types of loops?

Looping in programming languages is a feature which facilitates the execution of a set of instructions/functions repeatedly while some condition evaluates to true.

Java provides three ways for executing the loops:

1) While loop
2) For loop
3) do while loop

10) Does main() method in Java return any data? Explain the difference between float and double variable in Java?

main() method doesn't return anything, its return type is void.

In Java programming, float and double data types both represent in floating-point numbers but a double data type is a little more precise than float.

Double data type offers more precision than float data type.

Double needs 64-bit storage compared to float 32-bit storage.

Double has a higher range than float data type as it has more bits to store the data.