1) **Why do we need static keyword in Java Explain with an example?**

Ans: It makes our program more efficient, as every object doesn't allocate separate memory to a static variable. for example, the company name of employees, college name of students, etc. The static variable gets memory only once in the class area at the time of class loading.

2) **What is class loading and how does the Java program actually executes?**

Ans: In Java, classloading is the process of loading class files into the JVM(Java Virtual Machine) at runtime. It is responsible for loading classes from various sources,such as the file system,network & databases,and making them available to the JVM for execution.

3) **Can we mark a local variable as static**

Ans: No, we cannot have a static local variable.

4) **Why is the static block executed before the main method in java?**

Ans: The static blocks always execute first before the main() method in Java because the compiler stores them in memory at the time of class loading and before the object creation.

5) **Why is a static method also called a class method?**

Ans: A static method is a method that belongs to a class rather than an instance of a class. This means you can call a static method without creating an object of the class. Static methods are sometimes called class methods.

6) **What is the use of static blocks in java?**

Ans: It is used to initialise static data members.It is used to initialise before the main method at the time of class loading. It gets executed only once when the class gets loaded. It is not necessary to execute it again when creating different objects after the first time

7) **Difference between Static and Instance variables**

Ans: <u>STATIC VARIABLE :</u>

- These variables are called "class variables".
- These variables will get memory in the method area.
- If the value does not change from object to object then we need to use static variables.
- Inside a static area we can access static variables only.
- Static variables are created using static keywords

<u>NON-STATIC VARIABLES :</u>

- These variables are called "Instance Variables"
- These Variables will get memory in the heap area.
- If the value changes from object to object then we need to use "non-static" Variables.
- Inside a non static area we can access both static and non-static variables.
- Non-static variables are created without using the "static" keyword.

8) **Difference between Static and non static members**

Ans: Static Member : Static members are those which belong to the class and you can access these members without instantiating the class. The static keyword can be used with methods,fields,classes (inner/nested),blocks.

Non-Static member : An non-static member is essentially anything within a class that is not marked as static. That is, that it can only be used after an instance of the class has been made (with the new keyword). This is because instances belong to the object, whereas static members, fields, classes(inner/nested), blocks.