4 static Keyword (HIGH PRIORITY)

1. **What is static keyword?**
   - The static keyword is used to define class-level members that belong to the class itself, not to any specific object.

2. **Why main method is static?**
   - The main() method is static because the JVM needs to call it without creating an object of the class.
   - If main() were non-static, object creation would be required, and the JVM wouldn't know how to start the program.

3. **Can we access static variable without object?**
   - Yes. Static variables can be accessed using the class name, because they belong to the class.
   - ClassName.staticVariable;

4. **Can static method access non-static members?**
   - No. A static method cannot directly access non-static members because non-static members require an object, and static methods are executed without any object.

5. **Can we override static methods?**
   - No. Static methods cannot be overridden; they are method hidden, not overridden.
   - **Reason (important): Overriding depends on runtime polymorphism, but static methods are resolved at compile time.**

6. **Difference between static and non-static members.**

Static	Non-static
Belongs to class	Belongs to object
One shared copy	Separate copy per object
Accessed using class name	Accessed using object
Loaded at class loading	Created during object creation

7. Static block execution order.

- Static blocks are executed:
  - Before main()
  - In the order they appear in the class
  - Only once

8. When static block is executed?

- A static block is executed when the class is loaded into the JVM, not when an object is created.

9. Can constructor be static?

- No. A constructor cannot be static because constructors are used to create objects, and static members belong to the class, not objects.

10. Why static variables are shared?

- Static variables are shared because only one copy exists per class in memory, and all objects refer to that same copy.
- **In simple words: This makes static variables memory-efficient for common data.**