

# 1 Lecture - CS506

## Important Subjective

Certainly, here are 10 short-answer questions related to Java features along with their answers:

### **\*\*Question 1:\*\***

Explain the concept of platform independence in Java.

### **\*\*Answer:\*\***

Platform independence in Java refers to the ability of Java programs to run on any platform (operating system) without modification. This is achieved by compiling Java source code into bytecode, which is then executed by the Java Virtual Machine (JVM) on the target platform.

### **\*\*Question 2:\*\***

What is encapsulation in Java?

### **\*\*Answer:\*\***

Encapsulation is a Java feature that involves bundling data (attributes) and methods (functions) that operate on the data into a single unit called a class. It restricts direct access to the data and enforces controlled access through methods, ensuring data integrity and security.

### **\*\*Question 3:\*\***

How does Java achieve multithreading?

### **\*\*Answer:\*\***

Java achieves multithreading by allowing multiple threads (smaller units of a program) to run concurrently within the same process. This enables efficient utilization of CPU resources and improves program responsiveness. Java provides built-in classes and methods for managing threads.

### **\*\*Question 4:\*\***

**Describe the concept of inheritance in Java.**

**\*\*Answer:\*\***

**Inheritance is a Java feature that allows a new class (subclass or derived class) to inherit properties and behaviors (fields and methods) from an existing class (superclass or base class). It promotes code reuse and hierarchical organization of classes.**

**\*\*Question 5:\*\***

**What is the purpose of exception handling in Java?**

**\*\*Answer:\*\***

**Exception handling in Java is used to gracefully manage and recover from unexpected errors and events that may occur during program execution. It involves using try, catch, and finally blocks to handle exceptions and prevent program crashes.**

**\*\*Question 6:\*\***

**Explain the significance of the "final" keyword in Java.**

**\*\*Answer:\*\***

**The "final" keyword in Java is used to denote that a class, method, or variable cannot be further extended, overridden, or modified. It ensures immutability, restricts inheritance, and allows the creation of constants.**

**\*\*Question 7:\*\***

**What is polymorphism in Java?**

**\*\*Answer:\*\***

**Polymorphism is a Java feature that allows objects of different classes to be treated as objects of a common superclass. It enables method calls to behave differently based on the actual object type, facilitating code flexibility and extensibility.**

**\*\*Question 8:\*\***

**Describe how Java achieves automatic memory management.**

**\*\*Answer:\*\***

**Java achieves automatic memory management through a process called garbage collection. The Java Virtual Machine (JVM) automatically deallocates memory occupied by objects that are no longer reachable or referenced by the program, reducing memory leaks and manual memory management.**

**\*\*Question 9:\*\***

**What is abstraction in Java?**

**\*\*Answer:\*\***

**Abstraction is a Java feature that focuses on simplifying complex reality by modeling classes based on their essential attributes and behaviors while hiding unnecessary details. It enables the creation of abstract classes and interfaces to define common characteristics and enforce method contracts.**

**\*\*Question 10:\*\***

**How does Java support networking?**

**\*\*Answer:\*\***

**Java provides networking capabilities through its extensive library of classes and APIs. It enables communication over the network using classes like Socket and ServerSocket for TCP/IP-based communication, and DatagramSocket for UDP-based communication, facilitating the development of networked applications.**