**Assignment-1**

**Object Oriented Programming with Java**

Q.1 Explain the core essence of Java as a programming language and its key features that have contributed to its widespread adoption among developers ?

Q.2 Explain the role of the “JVM” and “JRE” within the “JDK” and Compilation process for java code ?

Q.3 Explain the different types of operators in Java and how they are used with example ?

Q.4 Explain string and arrays and discuss the role of loops in manipulating strings and array with example in java ?

Q. 5 What is inheritance in object-oriented programming and their type , and how does it facilitate code reuse and organization ?

Q.6 Discuss the two main types of polymorphism in Java: compile-time polymorphism (method overloading) and runtime polymorphism (method overriding). ?

Q.7 What is abstraction in object-oriented programming, and how does it help in managing complexity and enhancing code readability?

Q.8 Explain the role of methods in interfaces, including how they are declared and implemented by classes that implement the interface.

Q. 9 Discuss the purpose of getter and setter methods in Java classes, and how they facilitate encapsulation by providing controlled access to class fields with example .

Q.10 What is a package in Java, and how does it help in organizing and managing classes and interfaces with example ?

Q.11 What is the import statement in Java, and how does it facilitate the use of classes and packages from external sources in your code?