Java Basics & OOPs Assignment Questions

# 1. Java Basics

1. 1. What is Java? Explain its features.
2. 2. Explain the Java program execution process.
3. 3. Write a simple Java program to display 'Hello World'.
4. 4. What are data types in Java? List and explain them.
5. 5. What is the difference between JDK, JRE, and JVM?
6. 6. What are variables in Java? Explain with examples.
7. 7. What are the different types of operators in Java?
8. 8. Explain control statements in Java (if, if-else, switch).
9. 9. Write a Java program to find whether a number is even or odd.
10. 10. What is the difference between while and do-while loop?

# 2. Object-Oriented Programming (OOPs)

1. 1. What are the main principles of OOPs in Java? Explain each.
2. 2. What is a class and an object in Java? Give examples.
3. 3. Write a program using class and object to calculate area of a rectangle.
4. 4. Explain inheritance with real-life example and Java code.
5. 5. What is polymorphism? Explain with compile-time and runtime examples.
6. 6. What is method overloading and method overriding? Show with examples.
7. 7. What is encapsulation? Write a program demonstrating encapsulation.
8. 8. What is abstraction in Java? How is it achieved?
9. 9. Explain the difference between abstract class and interface.
10. 10. Create a Java program to demonstrate the use of interface.