Diwali Homework

1. Define a class Student with variables rollNo, name, and marks. Create an object to display the details.

2. What is the difference between JDK, JRE, and JVM?

3. Explain the function of JIT compiler in Java.

4. Write Java code to create an object of class Car with attributes brand and price.

5. What are primitive and non-primitive data types? Give examples.

6. How is a package created in Java? Write syntax.

7. Write a method that calculates the square of a number.

8. What are arithmetic operators in Java? List all.

9. Write a program using if-else to check whether a number is even or odd.

10. Write a program to display numbers from 1 to 10 using a for loop.

11. What is a constructor? Why is it used?

12. Write an example showing constructor overloading.

13. What is a static variable? Give an example.

14. What is the use of the static keyword in Java?

15. Explain the purpose of the final keyword in Java.

16. Can we inherit a final class? Explain with reason.

17. List the four access specifiers in Java and explain each.

18. Write a code example showing public, private, and protected variables.

19. What is encapsulation? Explain with a simple example.

20. Why do we use getter and setter methods in encapsulation?

21. Write a program that adds two numbers using a method.

22. Differentiate between instance variable and local variable.

23. What is object creation? Show the syntax to create an object of class Laptop.

24. What are data types in Java?

25. Write a program to find the largest of two numbers using if-else.

26. What is the difference between while and do-while loops?

27. Write a program to print multiplication table of 5 using for loop.

28. What is the default value of an int variable?

29. How is the static method different from an instance method?

30. What are unary and ternary operators? Give examples.

31. Write a program to check whether a number is positive, negative, or zero.

32. Explain the working of switch-case in Java.

33. What is the purpose of import statement in packages?

34. Write a program using nested if statements.

35. What is a default constructor? When is it provided automatically?

36. Write a class with a parameterized constructor to initialize student details.

37. Can we overload constructors in Java? Give example.

38. What is the difference between = and == operators?

39. What is the use of this keyword in Java?

40. Write a method to return the area of a circle given its radius.

41. What is method signature?

42. What happens if you define a constructor with a return type?

43. What is the purpose of return statement in methods?

44. Can we have static methods without creating objects? Explain.

45. Write a Java code to calculate factorial using for loop.

46. What are the different types of operators in Java?

47. What is the difference between prefix and postfix increment?

48. Write a program using logical operators (&&, ||, !).

49. What is the scope of variables declared inside a method?

50. How do you call one method from another in the same class?

51. What are relational operators? Explain each.

52. Write a code example using nested loops.

53. What is the output of 10/3 and 10.0/3 in Java?

54. What happens if you make a constructor private?

55. What is the purpose of static block?

56. Can we have static and non-static variables in the same class?

57. What is variable shadowing? Explain with example.

58. What is the use of final variable? Give an example.

59. Can a final variable be initialized later? Explain.

60. Can we override a static method? Why or why not?

61. Explain what happens when we do not write a constructor in a class.

62. Write a code that uses 'this' keyword to differentiate between local and instance variable.

63. What are the naming conventions for variables in Java?

64. Write a program that checks whether a character is a vowel or consonant.

65. What is the purpose of the modulus operator (%)?

66. Write a loop to print even numbers between 1 and 20.

67. What are logical operators used for?

68. Can a method return more than one value? Explain.

69. Write a simple program that demonstrates method overloading.

70. What is method calling? Give example.

71. Explain difference between parameter and argument.

72. What are the rules for defining variable names in Java?

73. Write a program that sums numbers from 1 to 50 using while loop.

74. Explain short-circuit evaluation in logical operators.

75. What is a nested class? Give one example.

76. Write a program to display odd numbers from 1 to 10.

77. What is infinite loop? Give an example.

78. How can we exit from a loop before it finishes?

79. What is the continue statement? Explain with example.

80. Write a method that checks whether a number is prime or not.

81. What are class members?

82. Explain difference between data members and methods.

83. What is the use of the public keyword?

84. What does private mean in Java?

85. Write a class with one private variable and show how to access it using getter and setter.

86. What is encapsulation in OOPs? Why is it important?

87. What are constants in Java? How are they defined?

88. Write a program that demonstrates static variable sharing between objects.

89. What is variable initialization? Why is it important?

90. What are compile-time errors and runtime errors?

91. Can we have multiple methods with same name and parameters? Why or why not?

92. What is the difference between variable declaration and initialization?

93. What is the output of boolean b = 10 > 9; ?

94. What is the use of the main() method in Java?

95. Write Java program to find sum of digits of a number.

96. Explain what happens when we assign a value of one data type to another (type casting).

97. What is implicit and explicit type casting?

98. Write a simple Java program that calculates grade based on percentage using if-else ladder.

99. What happens if you use 'return' in a void method?

100. Write 5 short interview questions based on static, final, and encapsulation concepts.