



# LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade & NBA (Under Tier - I),  
An ISO 21001:2018, 14001:2015, 50001:2018 Certified Institution  
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada  
L.B. REDDY NAGAR, MYLAVARAM, NTR DIST., A.P.-521 230.

[hodcse@lbrce.ac.in](mailto:hodcse@lbrce.ac.in), [cseoffice@lbrce.ac.in](mailto:cseoffice@lbrce.ac.in), Phone: 08659-222 933, Fax: 08659-222931

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

### Object Oriented Programming Through Java (20CS05)

#### Unit Wise Important Questions

#### UNIT-1

##### Short Answer Questions (2 Marks):

- 1) Define the terms object & class in Java.
- 2) List the features/buzz words of Java.
- 3) List the commands to compile and run the java program.
- 4) What are the roles of JVM, JRE, and JDK in Java development, and how do they differ from each other?
- 5) What are the basic tokens in a Java program, and how do they contribute to program structure?
- 6) Explain the difference between primitive data types and reference data types in Java.
- 7) What is type casting in Java, & how can you perform explicit type casting between different data types?
- 8) What is the purpose of the ternary operator in Java, and provide an example of its usage?
- 9) How does operator precedence affect the evaluation of expressions in Java? Provide a simple example.
- 10) Describe the difference between the while loop and the do-while loop in Java.
- 11) What is the purpose of the break statement in Java, & how does it differ from the continue statement?
- 12) What is the function of the for-each loop in Java, and how does it simplify iteration over collections?
- 13) Describe a scenario where you would use a nested loop.
- 14) How does the switch statement work in Java, and how does it differ from a series of if-else statements?
- 15) What is the role of the assignment operator = in Java, & how does it differ from the equality operator ==?
- 16) Provide an example of using bitwise operators in Java. What are their typical applications?
- 17) What are the different types of comments in Java, and how do they differ?
- 18) How can you pass command-line arguments to a Java program?
- 19) What is inheritance in Java?
- 20) What is polymorphism in Java?
- 21) What is Abstraction in Java?
- 22) What is Encapsulation in Java?
- 23) What is the purpose of using final keyword in Java variables, and how does it affect variable behavior?
- 24) How does the increment operator ++ work in both prefix and postfix forms? Provide examples.
- 25) Explain the scope of a variable in Java with an example.
- 26) What is the purpose of escape sequences in Java strings? Provide examples of common escape sequences.

## **Descriptive Questions (Essay Questions)**

1. Differentiate between Procedure Oriented Programming (POP) and Object-Oriented Programming (OOP).
2. Describe the basic concepts of Object-Oriented Programming (OOP).
3. List and explain the different data types available in Java.
4. Describe various operators available in java.
5. Illustrate different types of control statements in Java.
6. How does Java handle type casting, and what are the differences between implicit and explicit casting?
7. Describe the purpose and usage of the `println()`, `print()` and `printf()` method for formatted output in Java.
8. Analyze the impact of operator precedence and associativity on expression evaluation in Java.
9. Compare the while, do-while, and for loops in terms of their control flow and typical use cases.
10. Define the term 'token' in the context of a Java program. What are the different types of tokens in Java?
11. Explain how variables are declared and initialized in Java. What are the key differences between instance variables and local variables?
12. Describe the importance of static variables and methods with example program.
13. What are literal constants in Java, and how are they different from symbolic constants?
14. How to read an input from the keyboard by using Scanner class? Give an example program.
15. What is the difference between local, instance, and static variables in Java?

**Note:** You may get some of the fundamental programs with different logics from the concepts (Operators & Control Statements)

**Example programs:** roots of the quadratic equation, prime number, Armstrong number, reverse of the given numbers, factorial of the given numbers, Fibonacci series, pattern printing etc.

## UNIT-2

1. What is a class in Java? Provide an example of a simple class declaration.
2. What is an object in Java? Describe its characteristics.
3. How do access modifiers affect class members in Java? Name and describe the four access modifiers.
4. What is the purpose of this keyword in Java? Provide an example where it is used.
5. How can you assign one object to another in Java? What happens to the original object?
6. What is a constructor in Java, and how does it differ from a regular method?
7. How do you define an overloaded constructor in Java? Provide an example.
8. What does it mean to pass arguments by value in Java? Provide an example.
9. What does it mean to pass arguments by reference in Java? Provide an example.
10. What is method overloading & constructor overloading?
11. What is the difference between the String class and the StringBuffer class in Java?
12. How do you extract a substring from a String object in Java? Provide an example.
13. How can you compare two strings in Java? What methods are available for string comparison?
14. What is a default constructor in Java? When is it used?
15. What is the role of the return keyword in a method? Provide an example of a method with a return type.
16. How do you declare a method that does not return any value in Java?
17. What is method recursion? Provide an example of a simple recursive method.
18. How do you convert a String to all uppercase or lowercase letters in Java? Provide examples.
19. What are the differences between the String, StringBuilder, and StringBuffer classes in terms of performance and usage?
20. List some of the useful methods of String & StringBuffer classes.
21. Explain whether the String object in Java is mutable or immutable.

### **Descriptive Questions (Essay Questions)**

- 1) Define the concept of a class in Java and list its key components.
- 2) What are the different access modifiers available in Java? Describe the visibility each modifier provides to class members.
- 3) Describe the purpose and use of constructors in Java. What are the different types of constructors?
- 4) Describe the process of constructor overloading in Java with an example program.
- 5) What is the difference between String and StringBuffer in Java? Provide a summary of their key differences.
- 6) How does method overloading enhance the flexibility of a Java program? Provide examples of method overloading in a practical scenario.
- 7) How does this keyword work in Java? Explain its use in constructors and variables with examples.

- 8) Explain the difference between pass by value and pass by reference in the context of Java method calls. How does Java handle these concepts?
- 9) What is encapsulation in Java, and how is it achieved using classes? Provide an example illustrating the concept of encapsulation.
- 10) What is the primary purpose of static keyword in Java? Provide examples of its use with variables and methods.
- 11) List and describe the different types of variables in Java. What distinguishes instance variables from class variables?
- 12) What is a nested class in Java? Provide examples of different types of nested classes.
- 13) Design a Java class for a simple banking application. The class should include fields for account number, account holder's name, and balance. Implement methods to deposit, withdraw, and check the balance. Use appropriate access control for the class members.
- 14) Write a Java program that demonstrates method overloading by creating multiple versions of a method to calculate the area of different geometric shapes (e.g., circle, rectangle, and triangle).
- 15) Create a Java program that uses a constructor to initialize an object and then demonstrates the use of this keyword to differentiate between instance variables and method parameters.
- 16) Describe various methods available in String & StringBuffer class.
- 17) Explain the concepts of deep copying and shallow copying in the context of object assignment in Java.