Semester: III	Department of Computer Science and Engineering	AY: 2026-27
Course Code: 1BCS302	Course Name: OBJECT ORIENTED PROGRAMMING WITH JAVA	

Question Bank

Q.	Module-01	M	L	C
1.	Explain the two paradigms of programming, abstraction and the three OOP principles (encapsulation, inheritance and polymorphism) with suitable examples.	8	L2	CO1
2.	Discuss the lexical issues in Java: whitespace, identifiers, literals, comments, separators and keywords.	8	L2	CO1
3.	Explain the primitive data types in Java with their size and range. Discuss type conversion, casting and automatic type promotion in expressions with examples.	10	L2	CO1
4.	What are arrays in Java? Develop a Java program to add two matrices of order N using two-dimensional arrays.	8	L3	CO1
5.	Explain arithmetic, relational, boolean logical, assignment and the ? operators with examples. List the operator precedence and the use of parentheses.	8	L2	CO1
6.	Explain the selection statements (if, switch) and iteration statements (while, do-while, for, for-each) in Java with syntax and example programs.	10	L2	CO1
7.	Explain the jump statements break, continue and return with examples. Illustrate nested loops and local variable type inference in a for loop.	8	L2	CO1
8.	Explain the structure of a simple Java program. Discuss blocks of code and the steps to compile and run a Java program.	6	L2	CO1
9.	Develop a Java program to find the largest of three numbers using the ? operator and nested if-else statements.	6	L3	CO1
10.	Develop a Java program to display a multiplication table using nested loops and to find the sum of the elements of an array using the for-each loop.	8	L3	CO1
	Module-02			
11.	Explain class fundamentals with the general form of a class. How are objects declared and how are object reference variables assigned? Illustrate with a program.	8	L2	CO2
12.	What is a constructor? Explain the use of the 'this' keyword and discuss garbage collection in Java with examples.	10	L2	CO2
13.	Explain method overloading and constructor overloading with suitable Java programs.	8	L2	CO2
14.	Explain how objects are used as parameters and how objects are returned from methods. Describe argument passing (call by value) and recursion with an example.	10	L2	CO2

Aditya College of Engineering and Technology

15.	Develop a Java stack class to hold a maximum of 10 integers with suitable methods (push, pop, display). Write a main method to illustrate the stack operations.	10	L3	CO2
16.	Explain access control (public, private, protected and default) and the use of static and final in Java with examples.	8	L2	CO2
17.	What are nested and inner classes? Explain with a Java program showing static nested class and inner (non-static) class.	8	L2	CO2
18.	Create a Java class called Student with USN, Name, Branch and Phone as variables. Write a Java program to create N Student objects and print the details with suitable headings.	10	L3	CO2
19.	Explain the use of static variables, static methods and static blocks in Java with an example program.	8	L2	CO2
20.	Develop a Java program that demonstrates overloaded constructors and the use of the 'this' keyword to call one constructor from another.	8	L3	CO2
	Module-03			
21.	Explain inheritance basics and the creation of a multilevel hierarchy in Java with a program. Explain the order in which constructors are executed.	10	L2	CO3
22.	Explain the two uses of the 'super' keyword with suitable Java programs.	8	L2	CO3
23.	Explain method overriding and dynamic method dispatch. Develop a Java program with a class Shape and sub classes Circle, Triangle and Square, each overriding draw() and erase(), to demonstrate polymorphism.	10	L3	CO3
24.	What are abstract classes? Explain the use of 'final' with inheritance (to prevent overriding and inheritance) with examples.	8	L2	CO3
25.	Explain local variable type inference with inheritance and briefly describe the methods of the Object class.	6	L2	CO3
26.	What is a package? Explain packages and member access, and importing packages. Develop a Java program to create a package named mypack and import and use it in a class.	10	L3	CO3
27.	Explain interfaces in Java, including default, static and private interface methods. Develop a program with an interface Resizable (resizeWidth, resizeHeight) implemented by a class Rectangle.	10	L3	CO3
28.	Differentiate between an abstract class and an interface with suitable examples.	8	L2	CO3
29.	Develop a Java program to demonstrate an abstract class with abstract and concrete methods.	8	L3	CO3
30.	Explain how interfaces support multiple inheritance in Java. Write a program to extend an interface and implement it in a class.	10	L3	CO3

Aditya College of Engineering and Technology

***Note:**

1. All modules should contain a minimum of **10** questions each and the total number of questions must be **50**.
2. Questions can carry marks of 06, 07, 08, 09, 10 and for problems: 04 or 05.
3. Follow the RBTL as per the keywords used to frame the questions.
4. Maintain the Course Outcomes (COs) as per the syllabus.
5. M: Marks, L: RBTL, C:COs.

Aditya College of Engineering and Technology