



**GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,
ODISHA, GUNUPUR
(GIET UNIVERSITY)**

B.C.A (Third Semester) Regular Examinations, November – 2024

BCA23302 - Object Oriented Programming with JAVA

(BCA)

Time: 3hrs

Maximum: 60 Marks

(The figures in the right-hand margin indicate marks)

PART – A

(2 x 5 = 10 Marks)

Q.1. Answer **ALL** questions

	CO #	Blooms Level
a. What is JAVA, and what are its main features?	CO1	K1
b. How are static variables and methods different from instance variables and methods?	CO1	K1
c. What is the difference between break and continue statements?	CO2	K1
d. What is the purpose of the final keyword?	CO3	K2
e. What is a deadlock in multithreading?	CO4	K2

PART – B

(10 x5=50 Marks)

Answer **ALL** questions

	Marks	CO #	Blooms Level
2. a. Describe the key features of JAVA.	5	CO1	K1
b. Describe the concept of the JAVA Virtual Machine (JVM) and its role in Java execution.	5	CO1	K1

(OR)

c. Write a program to print the Fibonacci series up to n terms.	5	CO1	K1
d. Write a program to reverse a given integer (e.g., 123 → 321).	5	CO1	K1
3.a. Write a program to count the occurrences of each character in a string.	5	CO2	K2
b. Write a program to calculate the factorial of a number using recursion.	5	CO2	K2

(OR)

c. How does the ' final ' keyword work in JAVA (for variables, methods, and classes)?	5	CO3	K2
d. What are access modifiers in JAVA? Explain with examples.	5	CO2	K1
4.a. What is the difference between method overloading and method overriding? give one example.	5	CO3	K2
b. Write a program to handle ArrayIndexOutOfBoundsException.	5	CO5	K2

(OR)

c. Write a program to handle multiple exceptions using multiple catch blocks.	5	CO5	K2
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d.	Write a program to demonstrate the use of try, catch, and finally blocks.	5	CO5	K2
5.a.	What is a thread lifecycle in JAVA? Explain its stages	5	CO5	K2
b.	Write a program to create a thread and demonstrate its lifecycle using start(), sleep(), and join().	5	CO5	K2
(OR)				
c.	Define Inheritance and its types.	5	CO4	K2
d.	Create a class Animal with a method sound(). Derive classes like Dog, Cat, and Cow and override the sound() method to display unique sounds.	5	CO4	K2
6.a.	What is constructor in JAVA? Write a program with a Student class having attributes like name, rollNumber, and grade. Initialize these attributes using a constructor.	5	CO3	K2
b.	Explain Encapsulation in JAVA.	5	CO4	K2
(OR)				
c.	Create a program that throws and handles a custom exception when invalid input is provided.	5	CO4	K2
d.	Explain Data Abstraction in JAVA.	5	CO3	K1

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