QP Code: S253A041 Reg. No | | | | | | | | | | | AY 23

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University)

B. Tech (Third Semester – Regular & Supplementary) Examinations, November 2025

23BCSPC23002/23BCMPC23002/23BCDPC23002-
Object-Oriented Programming through JAVA

(CSE, CSE(AIML), CSE(DS))

Time: 3 hrs Maximum: 60 Marks

Answer ALL questions

(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.	Identify the list of identifiers in the following code snippet: class Test { public static void main(String[] args){ int String=10; }}	CO1	K2
b.	Compare the differences between length and length() in Java.	CO3	K4
c.	Define overloading and overriding in Java.	CO1	K1
d.	Predict the output of the following code: Boolean b1=new Boolean("TRUE"); System.out.println(b1);	CO1	K2
e.	List out the differences between throw and throws keywords.	CO2	K2

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions

		Marks	CO #	Blooms Level
2. a.	Explain any 10 features of JAVA.	5	CO1	K1
b.	Write a Java program that accepts an integer from the user and determines whether it is a prime number or not.	5	CO3	K3
	(OR)			
c.	Compare the for, while, and do-while loops in Java in terms of control flow, entry/exit condition. Give an example where only do-while loop is suitable.	5	CO3	K4
d.	Implement a Java program to find the sum of digits of a number until the sum becomes a single digit.	5	CO1	K3
3.a.	Create a class named ‘Animal’ which includes methods like eat() and sleep(). Create a child class of Animal named ‘Bird’ and override the parent class methods. Add a new method named fly(). Create an instance of Animal class and invoke the eat and sleep methods using this object. Create an instance of Bird class and invoke the eat, sleep and fly methods using this object.	5	CO5	K6
b.	Design a Java program that achieves 25% of abstraction and 75% of non-abstraction using abstract classes with an example.	5	CO3	K6
	(OR)			
c.	Explain the following methods used in SringBuffer class with examples. i)append() ii) insert() iii) replace() iv) delete() v) length()	5	CO1	K1
d.	Create a base class Fruit with name, taste, and size as its attributes. Create a method called eat() which describes the name of the fruit and its taste. Inherit the same in 2 other classes Apple and Orange and override the eat() method to represent each fruit taste.	5	CO5	K6

4.a.	Differentiate between checked and unchecked exceptions with suitable examples.	5	CO2	K2
b.	Illustrate the significance of the “anonymous inner class”. Explain with an example.	5	CO3	K3
	(OR)			
c.	Implement a Java program to create a custom exception for validating a student’s performance (case 1: student's CGPA >=7.5 Messages: Eligible for more than 8LPA, case 2: student's CGPA >5 and CGPA<7.5 Messages: Eligible for 5LPA to 8LPA, case 3:Other cases, Message: Eligible for <=5 LPA).	5	CO3	K3
d.	Implement a Java program that creates two child threads (T1 and T2). Thread T1: Print the multiplication table of 5 from 5 × 1 = 5 up to 5 × 10 = 50. Thread T2: Print the multiplication table of 7 from 7 × 11 =77 up to 7×20 = 140.	5	CO3	K3
5.a.	Write a Java program where the outer class defines both a member inner class and a method-local inner class. Explain the compilation and execution process in detail.	5	CO4	K4
b.	Explain the life cycle of an Applet with a neat diagram. Describe the purpose of each method.	5	CO1	K1
	(OR)			
c.	Define synchronization in JAVA. How does the synchronized keyword ensure thread safety? Illustrate with an example.	5	CO2	K2
d.	Explain InputStream and OutputStream classes. Write a program to copy the contents of one file into another.	5	CO3	K2
6.a.	Design a GUI application to read two numbers entered in separate text fields and show their addition result in a third text field upon button click.	5	CO4	K3
b.	Design a Swing application using JFrame, JPanel, JLabel, and JTextField to accept employee details (ID, Name, Salary) and store them temporarily in an ArrayList when the user clicks the “Add” button.	5	CO1	K3
	(OR)			
c.	List and explain the steps to establish a JDBC connection with a database. Provide a sample Java code snippet demonstrating each step.	5	CO2	K3
d.	Develop a program using JDBC to fetch specific employee details (e.g., employees with salary > 50000). Display the results neatly in console format.	5	CO3	K3

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