K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Jun/Feb ~~Nov – Dec~~ 2025
Program: B. Tech Scheme III
Supplementary ~~Regular~~ Examination: SY Semester: III
Course Code: AIC304 and Course Name: Object Oriented Programming with Java
Date of Exam: ~~29/11/2025~~ 03/02/26 Duration: 02.5 Hours Max. Marks: 60

Instructions:
(1)All questions are compulsory.
(2)Draw neat diagrams wherever applicable.
(3)Assume suitable data, if necessary.

Q. No.	Question	Max. Marks	CO	BT level
Q 1	Solve any **two** questions out of three: (05 marks each)	10		
a)	Explain abstraction and encapsulation in Java.		CO1	U
b)	Explain method overloading, constructor overloading. How Java distinguishes between overloaded methods/constructors with examples.		CO2	U
c)	Describe member access control in Java (public, private, protected, default) in the context of inheritance. How do access modifiers affect visibility across packages and subclasses? Provide coding examples.		CO3	U
Q 2	Solve any **two** questions out of three: (05 marks each)	10		
a)	Explain the Java thread life cycle with a neat diagram. Describe each state (New, Runnable, Running, Blocked, Waiting, Terminated).		CO4	U
b)	What is JDBC? Explain its role in database connectivity		CO5	U
c)	Create a JavaFX application with a Button that changes the Label text when clicked.		CO6	Ap
Q.3	Solve any **two** questions out of three. (10 marks each)	20		
a)	Explain the different types of operators in Java with suitable examples for each category.		CO1	U
b)	i) Write a Java program using BufferedReader to read a string from the user and display it (5 Marks)		CO2	Ap

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	ii) Create a parent class Person. Accept name,age Create a child class Employee class , Accept employee_ID, salary. Create employee_detail() method to display all details of employee. (5Marks)			Ap
c)	Explain the concept of Layout Managers in detail. Compare FlowLayout, BorderLayout, GridLayout, and CardLayout with suitable code examples		CO5	U
Q.4	Solve any **two** questions out of three. (10 marks each)	20		
a)	Write a Java program that demonstrates the following concepts together: a. multilevel inheritance b. use of super to access superclass members c. method overriding d. abstract class implementation Explain how each feature works within your program.		CO3	Ap
b)	Explain the concept of Exception Handling in Java. Write a Java program that demonstrates the use of try, catch, finally, and throw keywords		CO4	Ap
c)	Explain the concept of AWT (Abstract Window Toolkit) in Java. Write a Java program to create a simple calculator GUI using AWT .		CO5	Ap

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