

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

A

Carry on ~~Nov-Dec 2024~~ June 2025
(B. Tech.) Program: Artificial Intelligence and Data Science Scheme: III
Regular Examination: SY Semester: III
Course Code: AIC304 and Course Name: Object Oriented Programming with Java
Date of Exam: 30/06/2025 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)	Write a program for the swapping of two numbers. Take input from the user.		CO1	Ap
b)	Differentiate between string class and string buffer class		CO2	U
c)	Explain method overriding with an example.		CO3	U
Q 2	Solve any two questions out of three: (05 marks each)	10		
a)	Explain Thread Life Cycle with diagram		CO4	U
b)	Write a program to add a component (like a button or label) to a container in Java?		CO5	Ap
c)	Construct FX application skeleton with example.		CO6	Ap
Q.3	Solve any two questions out of three. (10 marks each)	20		
a)	Create a program that evaluates a student's grade based on their marks. The program should ask the user to enter the student's marks, and then print the grade using the following scale: Marks 90-100: "A" Marks 75-89: "B" Marks 50-74: "C" Marks 35-49: "D" Marks below 35: "Fail" with proper output		CO1	Ap
b)	i)) Demonstrate for following operation on dynamic array (05 M) 1) Add element 2) Accesses the elements . ii) Demonstrate for following operation on array list (05 M) 1) Add element in array list 2) Accesses the element in array list		CO2	Ap

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c)	Write a Java program that throws and handles a custom exception. Create a custom exception called “InvalidAgeException” that is thrown when the age entered by the user is less than 18.		CO4	Ap
Q.4	Solve any two questions out of three. (10 marks each)	20		
a)	i) Write a Java program that creates a thread to print "Hello from the thread!" five times(using for loop). (05M) ii) Demonstrate that the “final” method cannot be overridden in a subclass.(05M)		CO2 CO3	Ap Ap
b)	i) Differentiate between throw and throws with examples ii) Differentiate between AWT and Swings		CO4 CO5	U U
c)	Design hotel booking system page using swing components. Page should have i) Personal information section (Name,Email,Phone number) ii) Booking detail section (Room type,check in date,check out date) iii) Submission button.		CO5	Ap
