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

SET-B

Nov – Dec 2024 Jan/Feb 2025

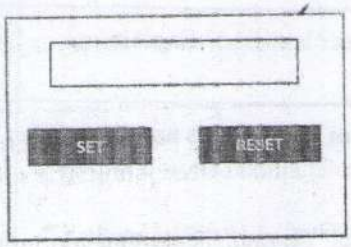
(B. Tech / M. Tech.) Program: Artificial Intelligence and Data Science Scheme: III

Supplementary Regular Examination SY Semester: III

Course Code: AIC304 and Course Name: Object Oriented Programming with Java

Date of Exam: 05-02-25 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)	Define a Class, Method and Object? Explain the syntax with example.		CO1	U
b)	Define the concept of constructor overloading.		CO2	U
c)	Explain five swing components with proper syntax.		CO5	U
Q 2	Solve any **two** questions out of three: (05 marks each)	10		
a)	Write a program for the addition, subtraction of two numbers using a constructor with proper output.		CO2	AP
b)	Write a Java program for the following output using Java Swing by Association inside constructor. 		CO5	AP
c)	List and explain commonly used controls while the GUI is designed using JavaFX.		CO6	U
Q.3	Solve any **two** questions out of three. (10 marks each)	20		
a)	Given a list of marks ranging from 0 to 100 , write a program to compute marks of five subjects (Take input from user) and print the number of students who have obtained marks i. In the range 81 to 100 (Distinction) ii. In the range 61 to 80 (first class) iii. In the range 41 to 60 (Second class)		CO1	AP

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

~~Nov – Dec 2024~~ Jan / Feb 2025
(B. Tech / M. Tech.) Program: Artificial Intelligence and Data Science Scheme: III
~~Supplementary~~/Regular Examination SY Semester: III
Course Code: AIC304 and Course Name: Object Oriented Programming with Java
of Exam: 05-02-25 Duration: 02.5 Hours Max. Marks: 60

	iv. In the range 0 to 40 (Fail) The program should use a minimum number of if statements.			
b)	Write a program that accepts a shopping list of five items from the user and store them in an array and perform following operations. i) To delete an item in the array ii) To add an item at a specified location in the array. iii) To add an item at the end of the array. iv) To print the elements of the array		CO2	AP
c)	Create a Java program that demonstrates multilevel inheritance. Define a Vehicle class, then extend it with a Car class, and further extend the Car class with a SportsCar class. Each class should have a method that displays its type.		CO3	AP
Q.4	Solve any **two** questions out of three. (10 marks each)	20		
a)	Write a java program that simulates a multi-threaded environment by implementing the Runnable interface. Create two threads: Thread 1: This thread should print numbers from 1 to 5 with a 1-second delay between each number. Thread 2: This thread should print letters from 'A' to 'E' with a 1-second delay between each letter. Use the Runnable interface to define the behavior of both threads and start them using Thread objects.		CO4	AP
b)	What is stream class? How are the stream classes classified? Explain in detail.		CO4	U
c)	Write a Java Swing application called Order Form that allows users to create a custom order for a fictional coffee shop. The form should include: 1. Coffee Selection : Options include "Espresso," "Latte," "Cappuccino," and "Americano."(Use checkbox) 2. Add-ons : "Extra Shot," "Whipped Cream," "Almond Milk," and "Syrup."(Use Checkbox) 3. Cup Size: Options should be "Small," "Medium," and "Large." Ensure that only one cup size can be selected at a time.(Use button) 4. Add a label to display the summary of the user's selection. When the user clicks an "Order Now" button, the label should update to display their selected options (coffee type, add-ons, size, and flavors).		CO5	AP

****