Course Code: 23MC1T05

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE(**AUTONOMOUS**)

I –MCA I-Semester Supplementary Examinations (BR23), February - 2026

OBJECT ORIENTED PROGRAMMING WITH JAVA (MCA)

Time: 3 hours Max. Marks: 70

Answer any Five Questions One Question for One UNIT
ALL the Question Carry Equal Marks

	UNIT-I	**Marks**	**CO**	**BL**
1.a)	Explain the concept of encapsulation in OOP.	7M	CO1	BL2
b)	List and describe the different types of variable scopes available in Java programming.	7M	CO1	BL1
	OR			
2.a)	How does Java handle automatic type conversion between primitive data types?	7M	CO1	BL4
b)	Write a Java program that demonstrates constructor overloading with different parameter types and quantities.	7M	CO1	BL5

	UNIT-II	**Marks**	**CO**	**BL**
3.a)	Describe the purpose of the 'super' keyword in Java inheritance and provide scenarios where it is useful.	7M	CO2	BL2
b)	Describe the significance of abstract classes in Java programming. How do abstract classes contribute to code organization and reusability? Discuss the role of abstract methods within abstract classes and how they enforce certain behaviours in subclasses.	7M	CO2	BL2
	OR			
4.a)	Define packages and interfaces in Java. How are they similar, and what fundamental differences distinguish them?	7M	CO2	BL1
b)	Develop an abstract Reservation class which has Reserve abstract method. Implement the subclasses like ReserveTrain and ReserveBus classes and implement the same.	7M	CO2	BL5

	UNIT-III	**Marks**	**CO**	**BL**
5.a)	Explain the different ways to handle exceptions.	7M	CO3	BL2
b)	What are Daemon Threads? Explain with an example	7M	CO3	BL3
	OR			
6.a)	What is Multithreading? Illustrate the ways to create multiple threads in java.	7M	CO3	BL4
b)	Write the Java program and demonstrate following functionality. ✓ The sender thread should generate messages with incremental IDs (starting from 1) and send them to the receiver. ✓ The receiver thread should consume messages and print them. ✓ Ensure that the sender thread produces messages only when the receiver is ready to receive them. Implement proper synchronization mechanisms for inter-thread communication. ✓ The program should terminate gracefully after a certain number of messages have been exchanged (e.g., 10 messages). ✓ implementation should use wait(), notify(), or notifyAll() for inter-thread communication.	7M	CO3	BL3

	UNIT-IV	Marks	CO	BL
7.a)	Describe the AWT event hierarchy.	7M	CO4	BL2
b)	Recall the methods used to handle key events in Java programming.	7M	CO4	BL1
	OR			
8.a)	Develop a Java program that utilizes the Canvas class to create a simple drawing application. Explain the key steps involved in setting up the Canvas, handling user inputs such as mouse clicks or drags, and implementing basic drawing functionalities like drawing lines and shapes on the Canvas.	7M	CO4	BL3
b)	Recall the syntax for adding action listeners to a button.	7M	CO4	BL1

	UNIT-V	Marks	CO	BL
9.a)	Difference between AWT and SWING?	7M	CO5	BL4
b)	List out the steps for creating simple user Registration form using java swing with an example	7M	CO5	BL3
	OR			
10.a)	Explain life cycle of an applet.	7M	CO5	BL2
b)	Explain the steps involved to execute and run an applet.	7M	CO5	BL2

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