



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai

Accredited by NAAC-UGC with 'A++' Grade (Cycle III) &

Accredited by NBA (B.E - CSE, EEE, ECE, Mech&B.Tech.IT)

COIMBATORE-641 035, TAMIL NADU



Reg. No:

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B.E/B.Tech- Internal Assessment – III
Academic Year 2024-2025 (Even Semester)
Fourth Semester

B

19CST205-OBJECT ORIENTED PROGRAMMING USING JAVA
(Common to FT, MCT, Aerospace, Agri)

Time: 1^{1/2} Hours

Maximum Marks: 50

Answer All Questions

| | | CO | Blooms | Industry/ GATE Ref |
|----|--|-----|--------|--------------------------|
| 1. | How does inheritance promote code reusability? | CO4 | ANA | - |
| 2. | Why Java doesn't support multiple inheritance using classes? | CO4 | UND | Amazon |
| 3. | Can private members of a base class be inherited? If yes, how are they accessed? | CO4 | ANA | - |
| 4. | Differentiate between Runnable and Blocked states in a thread's life cycle? | CO5 | ANA | - |
| 5. | A multithreaded process has two threads and each thread makes a system call that blocks it, what happens to the process? | CO5 | ANA | GATE 2025 |

PART – B (2*13=26 Marks) & (1*14=14 Marks)

| | | CO | Blooms | Industry/ GATE Ref |
|----|--|--------|--------|--------------------------|
| 6. | (a) Create a base class Employee and derived class Manager. Add relevant fields and methods, and overload a method. | 13 CO4 | APP | - |
| | (OR) | | | |
| | (b) Write a program to demonstrate how polymorphism work in Java, and what are some real-world examples of how it can be used? | 13 CO4 | APP | Leetcode |
| 7. | (a) Write a java program to demonstrate exception handling with try,catch,finally blocks. | 13 CO5 | APP | - |

(OR)

- | | | | | | | |
|----|------|---|----|-----|-----|-----------|
| | (b) | Write a Java program that demonstrates inter-thread communication using wait() and notify(). | 13 | CO5 | APP | - |
| 8. | (a) | Explain the concept of "method overriding" and | | | | |
| | (i) | "method overloading" in the context of inheritance. Provide examples to clarify the differences and discuss the implications of each in a class hierarchy. | 7 | CO4 | ANA | Microsoft |
| | (ii) | Explain the concept of thread synchronization. Why is it essential in multi-threaded programming? Provide examples of scenarios where synchronization is necessary. | 7 | CO5 | ANA | Microsoft |
| | | (OR) | | | | |
| | (b) | Write a java program to demonstrate in which | | | | |
| | (i) | state does a thread enter when sleep() is called? | 7 | CO4 | ANA | GATE 2023 |
| | (ii) | Explain the concept of deadlock in the context of thread synchronization. Discuss the necessary conditions for deadlock to occur and provide strategies to prevent or resolve deadlocks | 7 | CO5 | ANA | GATE 2020 |

Bloom's Taxonomy:

REM – Remember **UND** – Understand **APP**– Apply **ANA**– Analyze **EVA** - Evaluate

CRT - Create

Faculty in-charge**Teaching Coordinator****HoD****Dean**