

St. Clare College

Autonomous, Bengaluru

ROLL NO:

DATE:



MCA END SEMESTER EXAMINATION-APRIL 2026

MCA: FIRST SEMESTER

MCA 1525: Object Oriented Programming using JAVA

TIME: 3 hours.

MAX. MARKS: 70

This paper contains TWO printed pages and FOUR parts

Instructions:

1. Verify and ensure that the question paper is completely printed.
2. Any discrepancies or questions about the exam paper must be reported to the COE within 1 hour after the examination.
3. Students must check the course title and course code before answering the questions.

PART-A

Answer any EIGHT questions out of TEN. Each answer carries TWO marks.

[2X8 = 16]

1. Differentiate between Object oriented programming and Procedure oriented programming.
2. How Java makes a distinction between errors that occur during compilation and execution?
3. Describe the situations that call for the use of immutable strings.
4. How two-dimensional arrays are used in real time.
5. How an interface is partially implemented using abstract class.
6. Differentiate between throw & throws with an example program
7. Demonstrate how the finally block runs with return statement.
8. Create a user-defined package and demonstrate its compilation and execution.
9. Provide an example to show how thread priorities affect thread scheduling.
10. Describe how to connect to a JDBC database.

PART-B

Answer any FOUR questions out of SIX. Each answer carries FIVE marks.

[5X4 = 20]

11. Explain how Java responds to various kinds of faults when a program is running.
12. Summarise the impact of object slicing on method calls.
13. Create a college management system's nested package structure and Explain its execution mechanism.
14. Examine the JVM's default exception handling behaviour when exceptions aren't explicitly handled.
15. Use threads to build a banking system that allows multiple account access. Explain race situations, deadlock management, and synchronisation.
16. Create a JDBC application to illustrates commit and rollback. Analyse the properties of ACID.

PART-C

Answer any TWO questions out of FOUR. Each answer TEN marks.

[10X2=20]

17. Demonstrate selection and looping structures in Java with suitable examples and flow of control.
18. Summarize object slicing, typecasting, and final classes and explain their impact on inheritance behavior.
19. Implement the concept of importing classes from user defined package and creating packages.
20. Develop a program storing student objects in a file using serialization and retrieving them using deserialization. Analyze advantages and limitations.

PART-D

Answer the following question. Answer carries FORTEEN marks.

[14X1=14]

21. Develop a Bank Account Management System in Java that:

- i. Creates a BankAccount class.
- ii. Accepts account details and stores multiple objects using Serialization.
- iii. Reads the stored objects using Deserialization.
- iv. Uses Byte Streams and Character Streams appropriately.
- v. Explain the I/O streams used in the program.

Types of stream to be used

- i. FileInputStream
- ii. FileOutputStream
- iii. FileReader
- iv. FileWriter
- v. ObjectInputStream
- vi. ObjectOutputStream
