

MASTER OF COMPUTER APPLICATIONS (MCAOL)

1) J2EE — Definition + Components + Architecture

Repeated 4 times

- What is J2EE?
- Components of J2EE
- Parts of J2EE application model
- J2EE diagram

Years: Dec-2023, Jun-2024, Dec-2024, Jun-2025

2) Servlets — Definition + Architecture + Lifecycle

Repeated 4 times

- What is a servlet?
- Servlet lifecycle
- Servlet architecture with diagram
- Servlet role in J2EE

Years: Dec-2023, Jun-2024, Dec-2024, Jun-2025

3) Session vs Cookie (or Session Management)

Repeated 4 times

- Difference between session & cookie
- What is session?
- Cookies in session management
- Persistent vs non-persistent cookies

Years: Jun-2023, Dec-2023, Jun-2024, Jun-2025

4) JSP Programming (Simple Programs)

Repeated 3 times

MASTER OF COMPUTER APPLICATIONS (MCAOL)

- JSP program for addition
- JSP program for Fibonacci
- JSP program for temperature conversion

Years: Jun-2023, Dec-2023, Jun-2025

5) Struts / Struts2 — Concepts, Flow, Interceptors

Repeated 4 times

- What are interceptors?
- Role of interceptors
- Struts2 flow
- Struts1 vs Struts2

Years: Jun-2023, Dec-2023, Jun-2024, Jun-2025

6) Spring Boot — Definition, Need, Components, Comparison

Repeated 5 times

This is the MOST repeated topic in all years.

Repeated as:

- What is Spring Boot?
- Need for Spring Boot
- Compare Spring Boot vs Spring MVC
- Components of Spring Boot
- Spring Boot for microservices
- Packaging (JAR/WAR)

Years: Jun-2023, Dec-2023, Jun-2024, Dec-2024, Jun-2025

7) Spring Core — IoC / DI / AOP

MASTER OF COMPUTER APPLICATIONS (MCAOL)

Repeated 5 times

- Dependency Injection
- Inversion of Control
- IoC flow diagram
- AOP explanation
- DI with examples

Years: 2023–2025 all years

8) Hibernate — Basics + Methods + Lifecycle + States + ORM

Repeated 5 times

Repeated as:

- What is Hibernate?
- Hibernate utilities
- Hibernate states / entity lifecycle
- load() vs get()
- save() vs persist()
- ORM and its types
- Lazy vs Eager loading
- HQL queries

Years: Jun-2023, Dec-2023, Jun-2024, Dec-2024, Jun-2025

9) Message Digest / JCA / JSSE / Cryptography

Repeated 4 times

- What is message digest?
- JCA
- JSSE

MASTER OF COMPUTER APPLICATIONS (MCAOL)

- Message digest vs MAC
- Encryption data in transit / at rest

Years: Jun-2023, Dec-2023, Jun-2024, Dec-2024, Jun-2025

10) Web Application Vulnerabilities (XSS, CSRF, SQLi, DoS, IDOR)

Repeated 4 times

- XSS
- CSRF
- SQL Injection
- DoS
- IDOR

Years: Dec-2023, Jun-2024, Dec-2024, Jun-2025

11) Design Patterns

Repeated 3 times

- Definition of design patterns
- Creational design patterns
- Repository design pattern
- Utility of design patterns

Years: Jun-2024, Dec-2024, Jun-2025

12) Bootstrap

Repeated 3 times

- What is Bootstrap?
- Why Bootstrap is popular?
- Ways to include Bootstrap in JSP/HTML

MASTER OF COMPUTER APPLICATIONS (MCAOL)

Years: Jun-2023, Dec-2024, Dec-2024 (double)

13) CRUD Repository vs JPA Repository

Repeated 2 times

Years: Jun-2023, Dec-2024

14) Annotations — Types, Usage (Java/Hibernate/Spring)

Repeated 3 times

Years: Jun-2023, Jun-2024, Dec-2024, Jun-2025 (Hibernate config)

15) JSP Lifecycle / Servlet Architecture / Filters

Repeated 3 times

Years: Jun-2023, Dec-2023, Dec-2024

MOST IMPORTANT — ASKED 4 OR MORE YEARS

1. **Spring Boot (all subtopics)**
2. **Hibernate (methods + lifecycle + ORM + HQL)**
3. **IoC / DI / AOP (Core Spring concepts)**
4. **J2EE basics + architecture**
5. **Servlet lifecycle / architecture**
6. **Session vs Cookies**
7. **Struts2 Interceptors + Flow**
8. **Message Digest + JCA + JSSE**
9. **Web Security (XSS, CSRF, SQLi, DoS, IDOR)**
10. **Design Patterns**