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MCS-220

**MASTER OF COMPUTER
APPLICATIONS
(MCA-NEW)**

**Term-End Examination
December, 2025**

MCS-220 : WEB TECHNOLOGIES

Time : 3 Hours

Maximum Marks : 100

***Note :** Question No. 1 is compulsory. Attempt
any **three** questions from the rest.*

1. (a) What is design pattern ? Explain singleton design pattern with the help of suitable class diagram and code. 10

- (b) What is JSP ? Explain JSP life cycle and methods that control the JSP life cycle. 10
- (c) Explain Hibernate architecture with the help of a diagram. 10
- (d) What is Role-Based Login ? Explain how to restrict access based on roles in a web application. 10
2. (a) Explain CRUD (Create, Read, Update and Delete) operations. Also, explain how to map CRUD to SQL statements. 10

- (b) What is SpringMVC ? What is the use of DispatchServlet in SpringMVC ? Explain with example code. 10
3. (a) What is Cascading Operation ? Explain different cascade type in JPA. 10
- (b) What is Maven ? Describe Maven build phases. 10
4. (a) What is the need of ORM ? Explain different types of ORM mapping with example. 10
- (b) What is the need of session tracking ? Explain the use of cookies in session management in servlet programming. 10

5. Write short notes on the following : 4×5=20

(a) Repository Design Pattern

(b) JSP Implicit Objects

(c) Java Custom Annotations

(d) Java Cryptography Architecture

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