

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

**Term-End Examination**

**June, 2022**

**MCS-220 : WEB TECHNOLOGIES**

*Time : 3 hours*

*Maximum Marks : 100*

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**Note :** Question no. 1 is **compulsory** and consists of 40 marks. Attempt any **three** questions from the rest.

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1. (a) What is J2EE ? Briefly explain J2EE architecture. 10
- (b) Explain servlet architecture. Also briefly explain the use of servlet with the help of an example. 10
- (c) Explain JSP scripting elements with the help of a program. 10
- (d) What is Spring Boot ? Briefly explain Spring Boot application properties. 10

2. (a) What is a design pattern ? Explain the advantages of using a design pattern in enterprise applications development, with the help of an example. 10
- (b) Explain Hibernate configuration with annotations. 10
3. (a) Explain Spring MVC framework with the help of a suitable diagram. 10
- (b) Explain the working and flow of Struts 2. 10
4. (a) Explain the steps of database connection using JSP and JDBC, with the help of a program. 10
- (b) Explain the use of load( ) and get( ) methods of Hibernate session, with the help of an example. 10
5. Write short notes on the following : 4×5=20
- (a) Java Cryptography Architecture (JCA)
- (b) JSP Standard Tag Library (JSTL)
- (c) JSP Life Cycle
- (d) Factory Design Pattern
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