M.C.A.(Sem-I)   April - 2023

(3 Hours)   **[Total Marks: 80]**

N.B.: (1) Question No. 1 is Compulsory

      (2) Attempt any three questions out of the remaining Q.2 to Q.6.

      (3) Answers to sub questions should be answered together.

Q.1 **1**   Attempt **any four**   **20**

   (a) Explain JSP Architecture in detail.

   (b) What are generics? List down the advantages of using generic

   (c) Write a note on Autowiring in Spring Framework.

   (d) What is Spring AOP? What is its use? What are the different implementations of Spring AOP?

   (e) Write a note on JDBC Architecture.

Q. 2 **(a)** What is Functional Interface? How do you use Lambda Expression with Functional Interfaces?   **10**

    (b) What do you mean by POJO programming model? Give suitable example. List the properties of POJO class.   **10**

Q. 3 **(a)** Explain Spring framework in detail   **10**

    (b) Explain JDBC as it functions in two and three-tier system designs   **10**

Q. 4 **(a)** Define Pointcut designator and annotations with types.   **10**

    (b) Explain the different types of Dependency injection (DI).   **10**

Q. 5 **(a)** What is Spring Boot? What are the benefits of Spring Boot? How it is different from Spring MVC?   **10**

    (b) What are the different building blocks of JSP? Explain in detail.   **10**

Q. 6 **(a)** What is JDBC Connection Pooling? Why it is needed in Spring Boot?   **10**

    (b) Explain the methods of List class with suitable example.   **10**

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