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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA**(An Autonomous Institute Affiliated to AKTU, Lucknow)****B.Tech****SEM: VI - THEORY EXAMINATION (2022-2023)****Subject: Advanced Java Programming****Time: 3 Hours****Max. Marks: 100****General Instructions:****IMP:** Verify that you have received the question paper with the correct course, code, branch etc.**1.** This Question paper comprises of **three Sections -A, B, & C.** It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.**2.** Maximum marks for each question are indicated on right -hand side of each question.**3.** Illustrate your answers with neat sketches wherever necessary.**4.** Assume suitable data if necessary.**5.** Preferably, write the answers in sequential order.**6.** No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.**SECTION A****20****1. Attempt all parts:-**

- 1-a. Which of the following method is static and synchronized in JDBC API? (CO1) 1
- (a) getConnection()
 - (b) prepareCall()
 - (c) executeUpdate()
 - (d) executeQuery()
- 1-b. When doGet() method of servlet gets called? (CO1) 1
- (a) A GET request results from a normal request for a URL.
 - (b) The service() method checks the HTTP request type as GET and calls doGet() method.
 - (c) Both of the above.
 - (d) None of the above
- 1-c. JSP used for (CO2) 1
- (a) Creating static web pages
 - (b) Creating dynamic web pages

- (c) Creating client-side scripts
- (d) Creating server-side scripts
- 1-d. The following is not true about JSP scriptlet tag (CO2) 1
- (a) It can be used to declare and define methods
- (b) It can be used to write Java code
- (c) It can be used to output data to the web page
- (d) It can be used to include external files in JSP
- 1-e. Which Spring annotation is used to handle HTTP POST requests? (CO3) 1
- (a) @GetMapping
- (b) @PutMapping
- (c) @PostMapping
- (d) @PostMapping
- 1-f. How to handle shut down of IoC container? (CO3) 1
- (a) Using shutdownHook()
- (b) Using shutdownHandler()
- (c) Using registerHook()
- (d) Using registerShutdownHook()
- 1-g. Which interface contains the results of the validation performed on the form object? (CO4) 1
- (a) BindingResponse
- (b) ValidationResult
- (c) BindingResult
- (d) ValidationResponse
- 1-h. Select all IDE that can be used for Spring boot Development (CO4) 1
- (a) IntelliJ
- (b) Eclipse
- (c) Spring Tool Suite(STS)
- (d) All the Above.
- 1-i. Which of the following is an entity's unique identifier? (CO5) 1
- (a) Transactions
- (b) Entity
- (c) Primary key
- (d) Relationships

- 1-j. Annotation for Hibernate exceptions to be translated into Spring's `DataAccessException` for consistent exception handling? (CO5) 1
- (a) Translation
 - (b) Repo
 - (c) Repository
 - (d) None of the mentioned

2. Attempt all parts:-

- 2.a. Difference between SQL Date and `java.util.Date` in Java? (CO1) 2
- 2.b. Discuss the concepts that JSPs differ from Servlets. (CO2) 2
- 2.c. Discuss different components of a Spring application. (CO3) 2
- 2.d. Explain the basic Annotations that Spring Boot Offers? (CO4) 2
- 2.e. Importance of Named Query in JPA. Justify. (CO5) 2

SECTION B

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3. Answer any five of the following:-

- 3-a. Describe the role of the `JDBC DriverManager` class? (CO1) 6
- 3-b. Explain `ResultSet` interface? (CO1) 6
- 3-c. Explain the four phases of the JSP life cycle and their purpose in the execution of a JSP page. (CO2) 6
- 3-d. Discuss the purpose and key features of the `javax.servlet.jsp.PageContext` class in JSP development, and provide an example of how it can be used to access various Implicit Objects. (CO2) 6
- 3.e. Discuss the different types of IoC (dependency injection) (CO3) 6
- 3.f. Draw and design the mvc architecture of student management system. (CO4) 6
- 3.g. Explain the Persistent Properties in detail? (CO5) 6

SECTION C

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4. Answer any one of the following:-

- 4-a. How do you register a driver? Explain both approaches for that. (CO1) 10
- 4-b. Write a Program using servlets to display data from a database table. (CO1) 10

5. Answer any one of the following:-

- 5-a. Explain the role of JSP in developing web applications using the Java EE platform, and discuss how it integrates with other Java EE technologies such as Servlets, JPA, and EJB. (CO2) 10
- 5-b. Explain the difference between the `pageContext` and request implicit objects in 10

JSP, and provide examples of when each object should be used. (CO2)

6. Answer any one of the following:-

- 6-a. Describe the steps to add a bean in a Spring application? (CO3) 10
- 6-b. Demonstrate select operation on a database table using java spring. (CO3) 10

7. Answer any one of the following:-

- 7-a. Explain about Spring Boot CRUD Operations and show with example the update operation. (CO4) 10
- 7-b. Explain about Spring Data JPA, its features, and show example of Spring Boot JPA for flight management. (CO4) 10

8. Answer any one of the following:-

- 8-a. What is a Named Query in JPA? How is it used? And what are the benefits of using this? (CO5) 10
- 8-b. What are the main new features in the JPA 2.1 specification compared with JPA 2.0 (list at least five or six new features)? (CO5) 10

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