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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

MCA Integrated

SEM: VI - THEORY EXAMINATION (2025 - 2026)

Subject: Advance Java

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:-

- (1.1) A directive in JSP starts with:[CO1,K1] 1
- (a) <%@ %>
- (b) <%! %>
- (c) <% %>
- (d) <%= %>
- (1.2) Annotations in Servlet replace:[CO1,K1] 1
- (a) Web.xml
- (b) pom.xml
- (c) jsp.xml
- (d) server.xml
- (1.3) The scope that exists only within a single request-response cycle is:[CO2,K1] 1
- (a) Page
- (b) Request
- (c) Session
- (d) Application
- (1.4) Which method is used in JDBC to execute INSERT, UPDATE, or DELETE SQL statements?[CO2,K1] 1
- (a) executeQuery()
- (b) executeUpdate()
- (c) runUpdate()
- (d) executeCommand()

- (1.5) If a bean is scoped to HTTP request, scope is[CO3,K1] 1
- (a) session
 - (b) global-session
 - (c) prototype
 - (d) request
- (1.6) The IoC containers in Spring are:[CO3,K1] 1
- (a) BeanFactory, ApplicationContext
 - (b) BeanFactory, ApplicationContext, IoContextFactory
 - (c) BeanFactory, BeanContext, IoContextFactory
 - (d) BeanFactory, ApplicationContext, BeanContext
- (1.7) Which annotation is used to show a form handler?[CO4,K1] 1
- (a) `@PostMapping`
 - (b) `@GetMapping`
 - (c) `@Bean`
 - (d) `@Service`
- (1.8) Spring Boot is used for developing?[CO4,K1] 1
- (a) Web applications
 - (b) Distributed applications (RESTful web services)
 - (c) Microservices
 - (d) All of the above
- (1.9) Which hook is used to manage state in a functional component?[CO5,K1] 1
- (a) useEffect
 - (b) useContext
 - (c) useState
 - (d) useReducer
- (1.10) Props are _____ into other components.[CO5,K1] 1
- (a) Imported
 - (b) Pushed
 - (c) Passed
 - (d) Fetched

2. Attempt all parts:-

- (2.1) State the purpose of paint(Graphics g) in Applet programming [CO1][K2] 2
- (2.2) Define a cookie and illustrate one use case in a web application [CO2].[K2] 2
- (2.3) Explain the term Bean Wiring [CO3].[K2] 2
- (2.4) Define a WYSIWYG editor and explain how it can be integrated into a Spring Boot form [CO4].[K3] 2
- (2.5) Describe the purpose of JSX [CO5].[K2] 2

SECTION-B

30

Answer any one of the following:-

- (3.1) Describe the syntax and purpose of JSP directive tags with an example [CO1][K2] 6

(3.2)	Discuss Applet class methods with code examples [CO1][K3]	6
Answer any one of the following:-		
(3.3)	Write a code snippet to create a new record using Hibernate and explain each step [CO2].[K2]	6
(3.4)	Discuss Page and Request scopes in JavaBeans with use cases [CO2].[K4]	6
Answer any one of the following:-		
(3.5)	Explain Bean lifecycle in Spring Framework [CO3].[K2]	6
(3.6)	Explain different modes of autowiring [CO3].[K2]	6
Answer any one of the following:-		
(3.7)	Define authorities and differentiate them from roles [CO4].[K2]	6
(3.8)	Implement the "Remember Me" feature securely in Spring Security [CO4].[K3]	6
Answer any one of the following:-		
(3.9)	Analyze the importance of section wrap-up in a React project [CO5].[K2]	6
(3.10)	Describe asynchronous calls in React [CO5].[K2]	6
<u>SECTION-C</u>		50
4. Answer any <u>one</u> of the following:-		
(4.1)	Compare stages of Applet life cycle with method overrides [CO1][K3]	10
(4.2)	Define MVC architecture and implement it in a Java web application [CO1][K3]	10
5. Answer any <u>one</u> of the following:-		
(5.1)	Describe the workflow of a Hibernate-based Java application from setup to CRUD [CO2].[K5]	10
(5.2)	Explain JavaBeans scopes (Session, Application, Page, Request) and compare them [CO2].[K3]	10
6. Answer any <u>one</u> of the following:-		
(6.1)	Implement a program to inject a Java Collection in Spring [CO3].[K3]	10
(6.2)	Explain the concept of RESTful services in Java with advantages [CO3].[K3]	10
7. Answer any <u>one</u> of the following:-		
(7.1)	Design and implement the homepage of a blog application that displays a list of posts with pagination and sorting [CO4].[K4]	10
(7.2)	Justify how pagination and sorting enhance user experience and performance in large-scale blog applications [CO4].[K5]	10
8. Answer any <u>one</u> of the following:-		
(8.1)	Explain lifecycle methods of React components [CO5].[K3]	10
(8.2)	Differentiate between createElement and cloneElement in React [CO5].[K4]	10