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Subject Code:- AMICA0601

Roll. No:

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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 (20..... - 20.....)

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-a. Which method is called once in an Applet's life cycle?[CO1,K1] 1
- (a) init()
 - (b) start()
 - (c) paint()
 - (d) destroy()
- 1-b. A Java Servlet runs on the:[CO1,K1] 1
- (a) Web Browser
 - (b) Web Server
 - (c) Client Machine
 - (d) JVM only
- 1-c. Which scope in JavaBeans is used for data that should be available only for a single client's session?[CO2,K1] 1
- (a) Page
 - (b) Request
 - (c) Session
 - (d) Application
- 1-d. Which method is used to retrieve a cookie in a servlet?[CO2,K1] 1
- (a) request.getSession()
 - (b) request.getCookie()

- (c) request.getCookies()
(d) response.getCookie()
- 1-e. What is the default scope of the Spring Bean?[CO3,K1] 1
(a) singleton
(b) prototype
(c) request
(d) session
- 1-f. What are two ways to achieve dependency Injection in Spring?[CO3,K1] 1
(a) Using Getter and Setter methods
(b) Using Setter and Constructor
(c) Using Getter and Constructor
(d) Using Setter and Factory methods
- 1-g. What is an Authority in Spring Security?[CO4,K1] 1
(a) A user methods
(b) A user class
(c) A database
(d) A URL
- 1-h. How do you get a post by ID in Spring Boot?[CO4,K1] 1
(a) `findById(id)`
(b) `getPost()`
(c) `read()`
(d) `post()`
- 1-i. Which command is used to create a React app?[CO5,K1] 1
(a) npx create-react-app
(b) npm install react
(c) node react-new
(d) react-start
- 1-j. Which hook is used to manage state in a functional component?[CO5,K1] 1
(a) useEffect
(b) useContext
(c) useState
(d) useReducer
2. Attempt all parts:-
- 2.a. Differentiate between an Applet and an Application [CO1][K4] 2
- 2.b. Define a cookie and illustrate one use case in a web application [CO2].[K2] 2
- 2.c. Describe IoC (Inversion of Control) Container [CO3].[K1] 2
- 2.d. Define the "remember me" feature in Spring Security and describe its implementation [CO4].[K3] 2

2.e.	Explain the use of Axios in React [CO5].[K2]	2
SECTION-B		30
3. Answer any <u>five</u> of the following:-		
3-a.	Set up a basic Hello Servlet program [CO1][K2]	6
3-b.	Explain the purpose of MVC in web development [CO1][K2]	6
3-c.	Explain the creation and use of SessionFactory and Session in Hibernate [CO2].[K2]	6
3-d.	Explain the purpose of the model layer and how database logic is organized [CO2].[K2]	6
3.e.	Discuss the benefits of Spring Framework [CO3].[K2]	6
3.f.	Implement forgot password and reset password functionality in Spring Boot [CO4].[K5]	6
3.g.	Differentiate between GET and POST methods in React network calls [CO5].[K2]	6
SECTION-C		50
4. Answer any <u>one</u> of the following:-		
4-a.	Compare stages of Applet life cycle with method overrides [CO1][K3]	10
4-b.	Explain the Servlet life cycle using diagrams and code [CO1][K4]	10
5. Answer any <u>one</u> of the following:-		
5-a.	Describe Hibernate HQL, its features, syntax, and CRUD examples [CO2].[K3]	10
5-b.	Explain CRUD operation handling in the model layer with detailed code [CO2].[K4]	10
6. Answer any <u>one</u> of the following:-		
6-a.	Define the modules in Spring Session [CO3].[K3]	10
6-b.	Discuss and define the usage of package bean and service [CO3].[K5]	10
7. Answer any <u>one</u> of the following:-		
7-a.	Explain the concepts of roles and authorities in Spring Security and their implementation in real-world Spring Boot applications [CO4].[K5]	10
7-b.	Identify and resolve common bugs when implementing Spring Security with roles and authorities [CO4].[K5]	10
8. Answer any <u>one</u> of the following:-		
8-a.	Describe the advantages of ReactJS [CO5].[K3]	10
8-b.	Differentiate between real DOM and virtual DOM [CO5].[K3]	10