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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)
M.Tech (Integrated)
SEM: VI - THEORY EXAMINATION- (2023 - 2024)
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. Select the correct code to add an attribute in a HTTP Session object in servlets.(CO1)   1

    (a)   session.addAttribute(name,value)

    (b)   session.setAttribute(name,value)

    (c)   session.createAttribute(name,value)

    (d)   None of the above.

1-b. _____purpose of the ServletResponse object in a servlet. (CO1)   1

    (a)   To handle client requests

    (b)   To obtain initialization parameters

    (c)   To store session data

    (d)   To send data back to the client

1-c. Choose one Implicit Object which is used to get information about the servlet configuration? (CO2)   1

    (a)   page

    (b)   config

    (c)   application

    (d)   out

1-d. Total implicit Objects are available in JSP page (CO2)   1

    (a)   6

(b)   9

(c)   7

(d)   8

1-e.   The correct syntax for annotation wiring is_____.(CO3)   1

(a)   Inject

(b)   Bean

(c)   Autowired

(d)   Resources

1-f.   Discuss the steps to handle shut down of IoC container? (CO3)   1

(a)   Using shutdownHook()

(b)   Using shutdownHandler()

(c)   Using registerHook()

(d)   Using registerShutdownHook()

1-g.   MVC is an abbreviation that stands for_____ (CO4)   1

(a)   Monthly Variable Component

(b)   Model View Controller

(c)   Myocardial Vascular Capacity

(d)   All of the above

1-h.   The port is used by Spring Boot by default, to start the Tomcat (CO4)   1

(a)   9090

(b)   8080

(c)   0

(d)   4200

1-i.   Several instances of one entity are connected with many instances of another entity in a _____ relationship.(CO5)   1

(a)   @ManyToOne Relation

(b)   @OneToMany Relation

(c)   @OneToOne Relation

(d)   @ManyToMany Relation

1-j.   The JPA Entities will become detached when _____(CO5)   1

(a)   When the transaction (in transaction-scoped persistence context) commits, entities managed by the persistence context become detached.

(b)   If an application-managed persistence context is closed, all managed entities become detached.

(c)   Using a clear method

(d)   All of these

2. Attempt all parts:-

2.a.   Explain the working of DriverManager in JDBC.(CO1)   2

2.b.	Demonstrate the concepts of session Implicit Object in JSP.(CO2)	2
2.c.	Define Bean Wiring.(CO3)	2
2.d.	Explain role of dependency Injection.(CO4)	2
2.e.	Describe the role of Entity Manager in JPA.(CO5)	2

SECTION-B   30

3. Answer any <u>five</u> of the following:-

3-a.	List advantages and disadvantages of Servlets.(CO1)	6
3-b.	Describe all the life-cycle methods for a servlet.(CO1)	6
3-c.	Builda JSP program to retrieve data from HTML into JSP page and display on browser.(CO2)	6
3-d.	Demonstrate the purpose and syntax of JSP expression tags, and provide an example of how they can be used.(CO2)	6
3-e.	Differentiate between constructor injection and setter injection.(CO3)	6
3-f.	Discuss about component scans, Configuration in spring boot with example.(CO4)	6
3-g.	List out some features of JPQL.(CO5)	6

SECTION-C   50

4. Answer any <u>one</u> of the following:-

4-a.	Distinguish between the following Servlet, Generic Servlet and HTTP Servlet.(CO1)	10
4-b.	Describe the Transaction Management in JDBC and why do we need it?(CO1)	10

5. Answer any <u>one</u> of the following:-

5-a.	Develop a JSP application that uses the JSP custom tag library to implement a simple login functionality. Your application should use the JSP custom tags to validate user input and redirect the user to a welcome page if the login is successful. Write a brief report on the steps you followed to create the application, including details on the JSP custom tag library and the JSP tag life cycle.(CO2)	10
5-b.	Build a JSP program to show and display at least 3 active control.(CO2)	10

6. Answer any <u>one</u> of the following:-

6-a.	Discuss the role of JDBCTemplate also demonstrate update and delete operation on Student(sid, sname, saddress) Table using JDBCTemplate.(CO3)	10
6-b.	Implement a program to inject a Java Collection in Spring.(CO3)	10

7. Answer any <u>one</u> of the following:-

7-a.	Define Spring Boot Auto Configuration Classes and its need.Show code for configuration transaction manager.(CO4)	10
7-b.	Explain about Spring Boot CRUD Operations and show with example the create operation.(CO4)	10

8. Answer any <u>one</u> of the following:-

8-a.	Discuss the various query methods in JPA to retrieve data from the database. List	10

some of the most used methods.(CO5)

8-b.   Difference between JPA Repository and CRUD Repository. Explain with the help   10
of an example.(CO5)