Examination	: B.Tech Semester IV	Seat No.	:
Date	: 08/02/2024	Day	: THURSDAY
Time	: 1:00 PM TO 2:15 PM	Max. Marks	: 36

INSTRUCTIONS:

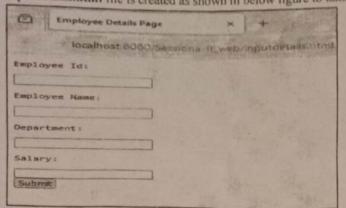| 1.	Figures to the right indicate maximum marks for that question.
2.	The symbols used carry their usual meanings.
3.	Assume suitable data, if required & mention them clearly.
4.	Draw neat sketches wherever necessary.

Q.1   Do as directed. [12]

CO2-R **(a)** Explain the following in brief. [2]
   i. ResultSet.TYPE_SCROLL_INSENSITIVE
   ii. ResultSet.CONCUR_UPDATABLE

CO3-U **(b)** Differentiate between include directive tag and include action tag. [2]

CO2-N **(c)** Consider the following code snippet. [2]

```
class Operation
{
        Operation() { }
        Operation(int a, int b)
        {   int sum = a + b;
                System.out.println("sum=" + sum);
        }
}
```

Write only necessary lines of code to answer the following questions.
   i. Define a functional interface for the class Operation to perform addition of two numbers.
   ii. Invoke the method of functional interface to perform the operation using method reference.

CO1-A **(d)** Distinguish between LinkedHashMap and TreeMap. [2]

CO3-R **(e)** What does the request.getSession method do? [2]

CO3-R **(f)** Fill in the blanks by choosing from the given options: [2]
   i. In web.xml, _____ tag is used under the <web-app> tag.
   [<init-param> / <context-param>]
   ii. The first argument of doGet method is _____.
   [HttpServletRequest / ServletRequest]

Q.2   Attempt *Any TWO* from the following: [12]

CO2-C **(a)** Write a java program using Stream API to retrieve total no of letters in all the unique student names with more than 5 letters. Use ArrayList to store the student names. [6]
   Sample Input and Output:
   Input:["Saurabh","vivek","damini","parul","vivek","Mansi","vishwas","vishwas","Saurabh"]
   Output :Total no of letters=20

CO2-C **(b)** Write a JDBC Program to perform the following operations. [6]
   Consider the following table is created in MySQL , in a database named **"library"**.
   BOOK(book_id INT PRIMARY KEY, book_name VARCHAR(50) , price DOUBLE, qty INT)
   i. Write a JDBC code which will take book_id from the user and it will increase the book price by 10%.
   ii. Write a JDBC code which removes all those books whose qty is 0.

CO2-C (c) Write a Java program to create a web application for storing employee details. The **[6]** **inputdetails.html** file is created as shown in below figure to take input for employee details.

Employee Details Page

localhost:8080/Sessiona-II_web/inputdetails.html

Employee Id:

Employee Name:

Department:

Salary:

Submit

Answer the given questions to store the details of an employee.
i. Define a Java Bean class named as **EmployeeBean** to store the details of an employee.
ii. Create a **displayEmpdetails.jsp** file to display the details of an employee using **EmployeeBean**.

Q.3 Attempt the following: **[12]**

CO1-C (a) Design a ShoppingCart class whose instance can keep track for the items in the cart. Create **[6]** **Item** class with members: **String productName, int quantity, double unitPrice.** The **ShoppingCart** class has members: **a** *collection* **of Item objects, double totalAmount, double discount, double payableAmount** and the methods to support 1) **viewCart** and 2) **addItems**. Write a **TestShoppingCart** class with the main method to test the viewCart and addItems methods of ShoppingCart. [*Choose a suitable collection*]

CO3-A (b) Write only the necessary lines of code to do the following in a Java Servlet: **[6]**
i. Include the response of resource first.jsp in the current servlet response.
ii. Add the sessionid to the requested resource's url (second.jsp).
iii. Retrieve a session scoped attribute named "displayname".

OR

Q.3 Attempt the following: **[12]**

CO1-C (a) A librarian wants to maintain an ordered record of the books given in table below. Design a **[6]** **Book** class such that its objects are comparable by **authorName**. Also, create **BookPriceComparator** class to compare the Book class objects by the **price** field. Write a Java program to add the following data to an **ArrayList of Book objects** and show the list sorted by 1) authorName and 2) price.

bookID	bookName	authorName	noOfPages	price
guj002	Kamthan	Ashwini Bhatt	184	150
eng001	Forrest Gump	Winston Groom	240	1170
eng002	The Great Gatsby	F. Scott Fitzgerald	224	109
guj003	Bhadrambhadra	Ramanbhai Neelkanth	216	158

CO3-A (b) Write only the necessary lines of code to do the following in a Java Servlet: **[6]**
i. Redirect your current page to www.google.com
ii. Retrieve a cookie named "myfavcolor".
iii. Set an application scoped attribute named "mydbcon" with an already available Connection object conn.

Bloom's Taxonomy levels: R-Remembering, U- Understanding, A-Applying, N-Analyzing, E- Evaluating, C-Creating