

Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BACHELOR OF ENGINEERING – SEMESTER 5 – EXAMINATION – SUMMER 2026

Subject Code: 3154204

Date: 30/05/2026

Subject Name: Internet and Web Programming

Time: 02:30 PM TO 05:00 PM

Total Marks: 70

Instructions:

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Simple and non-programmable scientific calculators are allowed.**

- Q.1**
- (a) What is the role of the *DriverManager* class in JDBC? **03**
 - (b) Justify the use of *InetAddress* class in Network Programming through Java. **04**
 - (c) What is the purpose of JSP standard tag libraries (JSTL)? Demonstrate the use of core tags of the SQL tag library. **07**
- Q.2**
- (a) What is the use of the *ResultSet* interface? **03**
 - (b) What is the significance of JDBC Drivers? Briefly explain different types of JDBC Drivers. **04**
 - (c) Write a user-defined function *registerStudent()* in Java using JDBC that takes parameters like *student_id*, *student_name*, *course*, and *email*, and inserts the record into a database table named *tblStudentMaster*. **07**
- OR
- Q.2**
- (c) Write a Java program to create a TCP server that calculates the factorial of a number received from TCP client and returns the same to client. **07**
- Q.3**
- (a) What is the purpose of the *web.xml* deployment descriptor? **03**
 - (b) Explain the life cycle of a Servlet with the help of a neat diagram. **04**
 - (c) Demonstrate the concept of URL rewriting for session tracking. **07**
- OR
- Q.3**
- (a) What is the difference between *ServletContext* and *ServletConfig*? **03**
 - (b) Describe the session management techniques available in Servlets. **04**
 - (c) Demonstrate the working of Servlet filters with an example. **07**
- Q.4**
- (a) What is JSP? How is it different from Servlets? **03**
 - (b) Differentiate between Value Expressions and Method Expressions in JSF Expression Language. **04**
 - (c) Develop a JSP-based login page that validates user credentials from a database and maintains session for authenticated users. **07**
- OR
- Q.4**
- (a) What is the purpose of the *jsp:useBean* action tag? **03**
 - (b) Compare JSF with traditional servlet-based web development. **04**
 - (c) Demonstrate the use of JSP directives with examples. **07**

- Q.5** (a) Explain the concept of Hibernate. What are its advantages over traditional JDBC? **03**
- (b) Show the use of any two important annotations for Hibernate mapping. **04**
- (c) Write a short note on Spring MVC architecture. **07**
- OR**
- Q.5** (a) Write a short note on persistent, transient, and detached objects in Hibernate. **03**
- (b) Demonstrate how to use named queries and parameter binding in HQL. **04**
- (c) Demonstrate dependency injection using XML configuration in a simple Spring example. **07**
