INSTITUTE OF SPACE TECHNOLOGY
KICSIT, Kahuta Campus

Assignment# 3 (Theory)	Class Section: BSCS-6	Submission Date: 07/12/2025
Subject: Web Design		

(CLO-1, PLO-1 [**Marks 10**]

Question.No1: Web Architecture and Structure.

a) Define the term World Wide Web (WWW).

Example: Explain how websites like Wikipedia or YouTube are structured on the web.

b) List and describe the main components of web architecture (client, server, browser, database).

Example: Show how a user accessing Netflix interacts with client, server, and database.

(CLO-3, PLO-3 [**Marks 10**]

Question.No2: Sessions, Cookies, and Authentication.

a) Apply the concept of sessions and cookies to maintain a logged-in user state.
Real-Life Scenario: You are building an e-commerce site like Amazon. Explain how cookies and sessions allow a user to stay logged in and remember items in their shopping cart across multiple pages.

b) Explain the process of user authentication and why it is important.
Real-Life Scenario: A banking website requires two-factor authentication (2FA). Describe how username/password validation combined with a one-time OTP ensures account security.

(CLO-4, PLO-2 [**Marks 10**]

Question.No3: Databases, Security, and Client-Server Scripting.

a) Compare SQL vs NoSQL databases in terms of structure, scalability, and typical applications.

Real-Life Scenario: You are designing a social media platform like Instagram. Which database would you choose to store user profiles, posts, and comments, and why?

b) Explain how HTTPS and SSL/TLS ensure encryption in transit for client-server communication.

Real-Life Scenario: A payment gateway like PayPal transmits sensitive card details. Discuss why HTTPS is necessary and how it protects users from data theft.

c) Analyze the difference between client-side and server-side scripting.

Real-Life Scenario: On a ride-sharing app, calculating routes happens on the server, while displaying maps and buttons happens on the client. Explain why certain tasks are done client-side vs server-side.

(CLO-1, PLO-1 [**Marks 10**]

Question.No4: HTTP, Methods, and APIs.

a) Describe the working of the HTTP protocol and its request-response model.

Real-Life Scenario: You are designing a food delivery app like UberEats. Explain how the GET method is used to fetch restaurant menus and the POST method is used to submit a user's order.

b) Explain the concept of an API (Application Programming Interface).

Real-Life Scenario: Your app needs to display real-time weather data for users' locations. Discuss how the weather API communicates with your app and returns data for display.

Submission Instructions (Google Classroom)

1. **Organize Your Files:**
   - Save your project in a folder with your **full name and student ID** (e.g., John_Doe_12345).
2. **Submit to Google Classroom:**
   - Go to **Google Classroom** and open the assigned task.
   - Click on **"Add or Create"** → **"File"** and upload your ZIP file.
   - Click **"Turn In"** to finalize the submission.