World University of Bangladesh (WUB)
Department of Computer Science and Engineering
Bachelor of Science in Computer Science and Engineering
Final Examination
Course title: Web Technologies and programming **Course Code:** CSE 06132228
Batch: 64B

Time: 2 Hours   **Total Marks: 40**

Answer four of the following questions including at least one from Section A
Answering CO marked questions are mandatory

Section- A

1. a. Explain the concept of the World Wide Web and how it differs from the Internet. (CO1)   5

   b. Explain the purpose of data types in JavaScript, and demonstrate how to declare and use variables in a program. Apply JavaScript control structures (such as if-else) to create a program that calculates whether a number is prime. (CO2)   1+4

2. a. Describe the key differences between LAN, MAN, and WAN in terms of usage and performance.   5

   b. Explain the structure and operation of the Domain Name System (DNS) in relation to web hosting. Define and illustrate the concept of IP Addressing in the context of web technologies.   3+2

Section- B

3. a. Explain the life cycle of a servlet and describe how it interacts with user requests in a Java-based web application. (CO3)   5

   b. Create a JavaScript program that validates a form where the user is required to input a name, email, and phone number, and provides appropriate feedback for invalid entries. (CO4)   5

4. a. Synthesize the key differences between various cloud deployment models and discuss their relevance to web application development.   5

   b. Write an SQL query to create a view that displays the total revenue from the orders table, assuming the orders table has columns product_id and quantity, and the products table has price.   5

5. a. Describe the role of virtualization in cloud computing and create a use case for how it can be implemented in hosting a web application.   5

   b. Write the HTML and CSS code to create a table that is styled with alternating row colors and fixed headers. Ensure that the table is responsive for mobile devices.   5

6. a. Write an SQL query to count the number of employees in each department from the employees table where each employee has a department_id column.   5

   b. Discuss the key aspects to consider before starting a website development project. Illustrate how SEO and security considerations impact the design and development process.   5