**COMSATS University Islamabad, Lahore Campus**

**Midterm Examination – FALL 2024**

| **Course Title:** | **Web Technologies** | | | | **Course Code:** | | **CSC336** | **Credit Hours:** | **3(2,1)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Instructor/s:** | **M. Ali Hassan, Muhamma Usman Akram** | | | | **Program Name:** | | **BS (CS/SE)** | | |
| **Semester:** |  | **Batch:** |  | **Section:** |  | | **Date:** | **01-11-2024** | |
| **Time Allowed:** | **1.5 Hours** | | | | **Maximum Marks:** | | | **50** | |
| **Student’s Name:** |  | | | | **Reg. No.** |  | | | |

**Question 1:Answer the following questions [3\*5=15]**

CLO-1; Bloom Taxonomy Level: Understanding

1. Explain the concept of *Flexbox* in CSS. How does it differ from traditional layout methods like floats?
2. What is AJAX in web development? Explain how it improves the user experience of a website.
3. Describe the *GET* and *POST* methods in HTTP. In what scenarios would each method be appropriate to use?
4. Define media queries in CSS and explain their role in creating a responsive web design.
5. What is the difference between *var*, *let*, and *const* in JavaScript? Give examples of when each should be used.

**Question 2: Given the following HTML structure for a blog post list: [5]**

CLO-2; Bloom Taxonomy Level: Applying

<div class="testimonials">

<div class="testimonial">

<h3>John Doe</h3>

<p>"Great service and very satisfied with the results!"</p>

</div>

<div class="testimonial">

<h3>Jane Smith</h3>

<p>"Excellent experience, highly recommended!"</p>

</div>

</div>

**Write CSS to style the testimonials with the following specifications:**

* Display the testimonials in a vertical list.
* Add a border of 2px dashed #999 around each testimonial.
* Apply padding of 15px to each testimonial and set a background color of #f0f0f0.

**Question 3: You are given an HTML <input type="number"> element that allows users to enter a number representing the brightness level on a website (from 0 to 100). Write JavaScript code to display the current brightness level below the input when it is changed. [5]**

CLO-2; Bloom Taxonomy Level: Applying

<input type="number" id="brightnessInput" min="0" max="100" value="50">

<p>Current Brightness: <span id="brightnessLevel">50</span></p>

**Question 4: Given the following HTML structure for a book library: [20]**

CLO-2; Bloom Taxonomy Level: Applying

<div id="task-list">

<input type="text" id="task" placeholder="New Task">

<button id="add-task">Add Task</button>

<ul id="tasks">

<!-- Tasks will be added here -->

</ul>

</div>

Write JavaScript/jQuery code to implement the following task list functionalities:

* **Create**: Add a new task to the list when the "Add Task" button is clicked.
* **Read**: Display all tasks from an array when the page loads.
* **Update**: Allow editing a task by double-clicking on it.
* **Delete**: Remove a task when the "Delete" button next to each task is clicked.

**Question 5: Suppose you have a job application form that collects the applicant's full name, email, and a cover letter. Write a JavaScript function validateJobApplication() that checks the cover letter contains at least 50 characters. [5]**

CLO-2; Bloom Taxonomy Level: Applying

If the condition is not met, show an alert on the screen. The form's onsubmit attribute should call the validateJobApplication() function. If the function returns false (indicating validation failure), prevent the form submission.

<form id="jobApplicationForm" onsubmit="return validateJobApplication();">

<label for="fullName">Full Name:</label>

<input type="text" id="fullName" name="fullName" required><br><br>

<label for="email">Email:</label>

<input type="email" id="email" name="email" required><br><br>

<label for="coverLetter">Cover Letter:</label>

<textarea id="coverLetter" name="coverLetter" required></textarea><br><br>

<input type="submit" value="Apply">

</form>