

## Front-End Development Examination

**Total Marks:** 50

**Time Allotted:** 1 Hour

### Section A: Theory (10 Marks)

1. **(2 Marks)**  
What is the purpose of the `defer` attribute in a `<script>` tag in HTML?
2. **(2 Marks)**  
How does the `==` operator differ from the `===` operator in JavaScript?
3. **(2 Marks)**  
What are the key differences between `var`, `let`, and `const` in JavaScript?
4. **(2 Marks)**  
Explain the concept of the **CSS box-sizing** property. What are the two main values it can have?
5. **(2 Marks)**  
What does the term "responsive design" mean in web development?

### Section B: Practical (40 Marks)

1. **(10 Marks)**  
**HTML Task:**
  - Create an HTML form with the following fields:
    - Name (text input)
    - Age (number input)
    - Gender (radio buttons for Male, Female, Other)
    - Hobbies (checkboxes for Reading, Traveling, Coding)
    - A submit button
  - Ensure that the form submits the data using the `POST` method to a file named `submit.html`.
2. **(10 Marks)**  
**CSS Task:**
  - Create a simple webpage with a `div` element. Set the `div` to have a width of 200px and a height of 200px.
  - Apply the following styles to the `div`:
    - Set the background color to `lightgreen`.
    - Add a shadow to the `div` using the `box-shadow` property.
    - Center the `div` horizontally and vertically within the viewport using CSS Flexbox.
3. **(20 Marks)**  
**JavaScript Task:**
  - Write a JavaScript function named `calculateAverage` that accepts an array of numbers and returns the average of those numbers. Ensure that the function handles empty arrays and returns 0 if the array is empty.
  - Implement a simple **Tip Calculator**:
    - Create an HTML page with inputs for the bill amount and the percentage of the tip.

- Write a JavaScript function that calculates the tip based on the input values.
- Display the calculated tip and the total amount (bill + tip) on the page when the user clicks a "Calculate" button.