

Name: _____ **Date:** _____

Nail Full Stack Web Development for College Seniors

Asynchronous state management, CSS layouts, and DOM optimization — a rigorous synthesis of architectural patterns for robust software engineering.

1. When implementing a 'debounce' function to optimize window resizing events in JavaScript, which specific architectural problem are you addressing?

- A. Eliminating race conditions between multiple async API calls
- B. Reducing main-thread blocking by limiting the rate of execution
- C. Ensuring the event listener is garbage collected properly
- D. Bypassing the browser's same-origin policy limitations

2. In the context of the CSS Box Model, setting the property 'box-sizing' to _____ ensures that padding and border are included in the element's total width and height calculation.

- A. content-box
- B. padding-box
- C. border-box
- D. margin-box

3. In JavaScript, the 'Event Loop' allows for non-blocking I/O operations by offloading tasks to the system kernel whenever possible, despite JavaScript being single-threaded.

- A. True
- B. False

4. You are building a complex layout using CSS Grid. Which property would you use to define a multi-line area by name, allowing for semantic layout management without individual child positioning?

- A. grid-template-columns
- B. grid-auto-flow
- C. grid-template-areas
- D. grid-column-gap

5. The _____ API is a modern JavaScript interface used to manipulate the browser's session history, allowing for SPAs (Single Page Applications) to update the URL without a full page refresh.

- A. Navigation
- B. History
- C. Location
- D. Storage

6. A 'Closure' in JavaScript occurs when a function is able to remember and access its lexical scope even when that function is executing outside its original lexical scope.

- A. True

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B. False

7. When optimizing Critique of Web Accessibility (a11y), which HTML attribute is used to provide a descriptive label for interactive elements that do not have visible text content?

- A. alt
- B. aria-label
- C. title
- D. data-label

8. In a flexbox container, if you want the children to distribute remaining space equally but also allow them to shrink if the container is too small, you should set the 'flex' shorthand property to _____.

- A. 0 1 auto
- B. 1 1 0
- C. none
- D. 0 0 100%

9. The use of the 'async' keyword before a function definition ensures that the function automatically returns a Promise.

- A. True
- B. False

10. Which HTTP header is primarily used by a browser to prevent 'Cross-Site Scripting' (XSS) attacks by specifying which dynamic resources are allowed to load?

- A. Access-Control-Allow-Origin
- B. Content-Security-Policy
- C. Strict-Transport-Security
- D. X-Frame-Options