Name: _____   **Date: _____**

Wrangle Asynchronous Logic: Advanced 10th Grade Web Dev Quiz

Evaluate architectural patterns and debug the critical interplay between CORS, DOM manipulation, and semantic SEO in complex modern web applications.

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1. When implementing a high-performance image gallery, why is 'Intersection Observer' in JavaScript preferred over traditional scroll event listeners?

    A.   It forces the browser to use a synchronous execution thread for lower latency.

    B.   It runs on the main thread but prioritizes CSS animations over script execution.

    C.   It handles element visibility checks asynchronously, reducing main-thread jank.

    D.   It eliminates the need for HTML5 semantic tags by using virtual DOM nodes.

2. A CSS specificity of (0, 1, 1) will override a declaration with a specificity of (0, 0, 12).

    A.   True

    B.   False

3. To prevent a 'Flash of Unstyled Content' (FOUC) while using JavaScript to fetch theme preferences, the most robust architectural solution is to:

    A.   Apply 'display: none' to the <body> until the DOMContentLoaded event fires.

    B.   Inline a small blocking script in the <head> to apply the class before the body renders.

    C.   Use a 10ms setTimeout function to delay the loading of all external CSS files.

    D.   Wrap the entire HTML structure in a template tag to hide it during the fetch.

4. Which scenario best illustrates the 'Z-index Stack' failure where an element with z-index: 999 stays behind an element with z-index: 1?

    A.   The z-index: 1 element is using absolute positioning instead of relative.

    B.   The z-index: 999 element is inside a parent that has created a new stacking context.

    C.   The browser is using WebKit instead of Gecko for rendering the CSS box model.

    D.   The z-index: 999 element lacks a 'display: block' property.

5. Using the 'async' attribute on a <script> tag ensures that the script will execute only after the entire HTML document is fully parsed.

    A.   True

    B.   False

6. In the context of the CSS Grid layout, the property used to control the alignment of the entire grid within the container along the inline (horizontal) axis is:

    A.   align-items

    B.   justify-content

    C.   grid-auto-flow

    D.   place-self

7. A developer uses the Fetch API to get data from a different domain, but the request fails despite the URL being correct. What is the most likely architectural cause?

    A.   JavaScript doesn't support HTTPS requests natively.

    B.   The server has not configured Cross-Origin Resource Sharing (CORS) headers.

    C.   The HTML file is missing a <meta> charset='UTF-8'> tag.

    D.   The fetch function must be wrapped in a while-loop to check for server readiness.

8. When constructing a modern accessible form, the most semantically accurate way to associate a description text with an input field for screen readers is using:

    A.   The 'title' attribute on the input tag.

    B.   The 'aria-describedby' attribute pointing to the ID of the description.

    C.   A <span> tag placed directly after the input.

    D.   The 'alt' attribute on the form wrapper.

9. In JavaScript, 'closures' allow an inner function to access variables from its outer scope even after the outer function has finished executing.

    A.   True

    B.   False

10. Which CSS unit is most appropriate for creating a truly fluid typography system that scales based on the user's default browser font size while remaining proportional to the viewport width?

    A.   The 'px' unit for absolute precision.

    B.   The 'clamp()' function using 'rem' and 'vw' values.

    C.   The 'cm' unit for physical device consistency.

    D.   The 'vh' unit applied exclusively to the line-height property.