Name: _____   **Date:** _____

Answer Key: Invisible Logic, Visible Style: 10th Grade Web Architecture Quiz

Step into the shoes of a full-stack engineer and debug the friction between DOM manipulation, responsive layouts, and asynchronous programming.

---

1. A developer uses 'async' and 'await' when fetching a remote JSON resource to prevent the UI thread from freezing. This design pattern is an example of what concept?

Answer: B) Non-blocking Asynchrony

> Asynchronous programming (async/await) allows the browser to perform long-running tasks like API calls without stopping the execution of the rest of the script, ensuring a smooth user experience.

2. In the CSS Box Model, the space between the element's content and its border is known as _____.

Answer: C) Padding

> Padding is the internal spacing inside the element, whereas margin is the external spacing between different elements.

3. The 'Document Object Model' (DOM) provides a tree-like representation of an HTML document that JavaScript can navigate and modify at runtime.

Answer: A) True

> The DOM is the programming interface that allows JS to access and update the content, structure, and style of a document dynamically.

4. Which of the following CSS strategies is most effective for creating a layout that automatically rearranges columns based on the viewport width without using fixed pixel values?

Answer: C) CSS Flexbox or Grid with Media Queries

> Advanced web design relies on Flexbox and Grid combined with @media rules to ensure the layout is responsive across mobile, tablet, and desktop screens.

5. In JavaScript, if you want to store a value that can be updated but is confined to a specific block of code, you should use the _____ keyword.

Answer: B) let

Modern JavaScript (ES6) uses 'let' for block-scoped variables that change, while 'const' is for values that remain the same.

6. The HTML <section> and <article> tags perform the exact same functional role as <div> and are used only for aesthetic purposes in the code editor.

Answer: B) False

While they behave like block elements, semantic tags like <section> provide important structural meaning for SEO and screen readers, unlike the generic <div>.

7. What happens when a 'Promise' in JavaScript moves from a 'pending' state to a 'rejected' state?

Answer: C) The .catch() block handles the error

Error handling in JS utilizes the .catch() method to manage operations that fail, such as a denied database request.

8. To ensure an image is accessible to users with visual impairments, developers must include the _____ attribute within the <img> tag.

Answer: B) alt

The 'alt' (alternative text) attribute provides a description of an image for screen readers and search engine crawlers.

9. In the context of Cascading Style Sheets, if an ID selector (#bio) and a Class selector (.text) both target the same element with conflicting color rules, which rule wins?

Answer: B) The ID selector because it has higher specificity

CSS Specificity is a hierarchy where ID selectors carry more weight than class or type selectors, determining which style is applied.

10. Local Storage in web browsers allows developers to save data (like a user's dark mode preference) that persists even after the tab is closed and reopened.

Answer: A) True

LocalStorage is a client-side API that stores data with no expiration date, allowing web apps to 'remember' states between sessions.