# **CSS Diagnostic Test**

## **Section 1: Fundamentals (Basic Understanding)**

**1. What is CSS and what problem does it solve in web development?**

**2. What are the three ways to apply CSS to an HTML file? Explain when you would use each method and mention at least one advantage and disadvantage of each.**

**3. What is a CSS rule? Identify and explain each part of the following CSS rule:**

css

.container > p {

color: blue;

margin: 10px;

}

## **Section 2: Selectors & Specificity (Intermediate)**

**4. Explain the difference between these selectors and provide an example use case for each:**

* Class selector
* ID selector
* Attribute selector
* Pseudo-class selector

**5. What is CSS specificity? Calculate the specificity of these selectors and order them from lowest to highest:**

css

a) div p

b) .container #main

c) nav > ul li.active

d) p

e) [type="text"]

**6. When and why should you use !important? What are the potential problems with overusing it?**

## **Section 3: Box Model & Layout (Core Concepts)**

**7. Explain the CSS Box Model. What's the difference between box-sizing: content-box and box-sizing: border-box?**

**8. What's the difference between margin and padding?**

**9. Explain the difference between display: none, visibility: hidden, and opacity: 0.**

## **Section 4: Modern Layout Systems (Practical Application)**

**10. Explain what Flexbox is designed for. Then write code that:**

* Creates a horizontal navigation bar with items evenly spaced
* Vertically centers content in a container

**11. Explain what CSS Grid is designed for and when you'd choose it over Flexbox. Then write code that creates a basic 3-column, 2-row layout with a header spanning all columns.**

**12. What is the difference between justify-content and align-items in Flexbox? What about justify-items and align-content in Grid?**

## **Section 5: Responsive Design & Media Queries**

**13. What are media queries used for? Write a media query that:**

* Changes a 3-column grid to a single column on mobile devices
* Explain what "mobile-first" approach means in this context

**14. What's the difference between using em, rem, px, %, and vh/vw units? When would you use each?**

## **Section 6: Advanced Concepts (Going Deeper)**

**15. What is CSS inheritance? Give examples of properties that inherit and properties that don't.**

**16. Explain the CSS cascade. If multiple rules target the same element, how does CSS determine which styles to apply?**

**17. What are CSS custom properties (variables)? Write an example showing how to define and use them, including how to provide a fallback value.**

**18. What's the difference between position: relative, position: absolute, position: fixed, and position: sticky? Provide a practical use case for each.**

**19. Explain what pseudo-elements are. What's the difference between ::before and :hover? Provide a code example using ::before or ::after.**

**20. What are CSS transitions and animations? Write a simple example of each and explain when you'd use one over the other.**