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Date: October 15, 2025

# CSS Diagnostic Test

## Section 1: Fundamentals (Basic Understanding)

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

- CSS helps with Application Layer aspects of the web pages. It helps engineers design how the user will visually see the elements in the web page to make objects within the web page more intuitive for user interactions.

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.

- I haven't learned about CSS for the most part, so I can't answer this.

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

CSS

```
.container > p {  
  color: blue;  
  margin: 10px;  
}
```

- I don't know what a CSS rule is, but from what it looks like, it seems like a dictionary that defines how an item in the UI would look like.

## 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

- I don't know yet.

**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"]`

- I don't know yet.

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

- I don't know yet.

## 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`?**

- I don't know yet, but I'd assume it has to do with the interactive boxes that the user can click on, and what they hold. Content -box would hold information, and border -box would

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

- I don't know yet.

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

- I don't know yet.

## 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

- I don't know how to do these yet.

**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.**

- I don't know yet.

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

- I don't know yet.

## 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

- I don't know how to do these yet.

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

- I don't know yet.

## Section 6: Advanced Concepts (Going Deeper)

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

- I don't know yet.

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

- I don't know yet.

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

- I don't know yet.

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

- I haven't learned this yet, but I would assume that relative means that the position of the object/item moves according to where the user moves in that webpage (e.g. when you scroll down, the object moves down with you within the web page). Absolute and fixed would be an object stuck in a position regardless of how the user interacts, with the only difference being that one changes aspect ratios according to the user (e.g. zooming in and out). Sticky would be an object being able to be moved, but stick to a certain part of the user's screen, like a pop-up.

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

- I don't know yet.

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

- I don't know yet.