

Frontend Mock Interview - HTML, CSS, JavaScript

Section 1: HTML Questions

1. What is the difference between `<article>` and `<section>`?
2. How do you make a form accessible? What are `label` and `aria-label` for?
3. Can you explain how the browser parses HTML? What is the DOM tree?
4. What is the difference between `disabled`, `readonly`, and `required` in form fields?
5. How do you implement a custom checkbox or radio button using HTML and CSS?
6. When would you use `<template>` tag in HTML?

Section 2: CSS Questions

1. Explain the Box Model in detail - how does margin collapsing work?
2. How does z-index work? How do you debug stacking context issues?
3. What's the difference between `rem`, `em`, `%`, and `px`?
4. How would you build a responsive 3-column layout using Grid and Flexbox?
5. Can you build a card component with hover animation that reveals extra content?
6. What are pseudo-elements vs pseudo-classes?
7. What are some CSS performance optimization tips?
8. How does specificity calculation work in CSS?
9. What are custom properties (`--vars`) in CSS? Use case?
10. How would you implement a loading skeleton using pure CSS?

Section 3: JavaScript (Core + DOM + Async + OOP)

1. What is the difference between `var`, `let`, and `const`?
2. Explain `'this'` keyword in different contexts (global, object method, arrow function).
3. How does the event loop work?
4. What are Promises? How are they different from callbacks?
5. What's the difference between `null`, `undefined`, `NaN`, and `0`?
6. Can you write a function to deep clone an object?
7. Explain `map`, `filter`, and `reduce` with examples.



8. What's the difference between synchronous and asynchronous code?
9. Write a debounce function.
10. Explain how localStorage, sessionStorage, and cookies differ.

Section 4: Practical DOM Tasks / Live Coding

1. Create a button that adds a list item to a UL.
2. Create a live character counter in a textarea.
3. Toggle visibility of a div using JavaScript.
4. Build a dark mode toggle that persists using localStorage.
5. Make a tabbed UI with three tabs showing different content.
6. Implement a custom dropdown without using <select>.
7. Use fetch() to call a public API and display user cards.
8. Implement a progress bar that fills as user scrolls.
9. Build a form that validates email, mobile, and password.
10. On button click, change the background color randomly.

Section 5: Real-World Frontend Scenarios

1. How would you handle dynamic question rendering in a survey builder?
2. How would you architect a reusable Modal component?
3. How do you handle conditional logic in forms?
4. A user form throws 400 error - how do you debug?
5. A survey page takes 3s to render - how do you optimize?
6. How would you load a large list of responses (pagination/infinite scroll)?
7. How would you structure a component library for reusability?
8. How would you optimize load time and bundle size with lots of icons?

Bonus: Code Writing Tasks

1. Capitalize the first letter of every word in a sentence.
2. Dropdown menu that closes when clicking outside.
3. Lazy-load images below the fold.
4. Highlight all input fields that are empty on form submission.

