Interview Preparation Guide for Beginner Web Developer

Given you're a beginner with an interview tomorrow, I'll focus on the most commonly asked foundational questions that interviewers typically ask entry-level candidates.

HTML Questions

Q1: What is HTML? HTML (HyperText Markup Language) is the standard markup language used to create web pages. It provides the structure and content of a webpage using elements and tags.

Q2: What is the difference between HTML elements and tags? Tags are the markup syntax (like `<p>`) while elements include the opening tag, content, and closing tag together (like `<p>Hello</p>`).

Q3: What are semantic HTML tags? Semantic tags clearly describe their meaning to both the browser and developer. Examples: `<header>`, `<footer>`, `<article>`, `<section>`, `<nav>`. They improve SEO and accessibility.

Q4: What is the difference between `<div>` and `<span>`?

- `<div>` is a block-level element (takes full width, starts on new line)
- `<span>` is an inline element (only takes necessary width, doesn't break line)

Q5: What are HTML attributes? Attributes provide additional information about HTML elements. Example: `<img src="photo.jpg" alt="My Photo">` where `src` and `alt` are attributes.

Q6: What is the difference between `id` and `class`?

- `id` is unique, used once per page
- `class` can be used multiple times on different elements

CSS Questions

Q7: What is CSS? CSS (Cascading Style Sheets) is used to style and layout web pages. It controls colors, fonts, spacing, positioning, and responsive design.

Q8: What are the different ways to add CSS to HTML?

1. **Inline CSS**: `<p style="color: red;">Text</p>`

2. **Internal CSS**: `<style>` tag in `<head>` section
3. **External CSS**: Separate `.css` file linked with `<link>` tag

Q9: What is the box model in CSS? The box model consists of: Content → Padding → Border → Margin (from inside out). It determines how elements are sized and spaced.

Q10: What is the difference between margin and padding?

- **Margin**: Space outside the border (between elements)
- **Padding**: Space inside the border (between content and border)

Q11: What are CSS selectors? Selectors target HTML elements to apply styles:

- Element selector: `p { }`
- Class selector: `.classname { }`
- ID selector: `#idname { }`

Q12: What is the difference between `display: none` and `visibility: hidden`?

- `display: none`: Removes element completely (no space)
- `visibility: hidden`: Hides element but space remains

Q13: What is flexbox? Flexbox is a CSS layout model that makes it easier to design flexible responsive layout structures without using float or positioning.

JavaScript Questions

Q14: What is JavaScript? JavaScript is a programming language that makes web pages interactive. It runs in the browser and can manipulate HTML and CSS dynamically.

Q15: What are variables in JavaScript? Variables store data values. Declared using `var`, `let`, or `const`.

```
let name = "John";
const age = 25;
```

Q16: What is the difference between `var, let,` and `const`?

- `var`: Function-scoped, can be redeclared and updated
- `let`: Block-scoped, can be updated but not redeclared
- `const`: Block-scoped, cannot be updated or redeclared

Q17: What are data types in JavaScript?

- Primitive: String, Number, Boolean, Undefined, Null, Symbol

- Non-primitive: Object, Array, Function

Q18: What is the difference between == and ===?

- == checks value equality (with type conversion)
- === checks value AND type equality (strict equality)

```
5 == "5"  // true
5 === "5" // false
```

Q19: What are functions in JavaScript? Functions are reusable blocks of code that perform specific tasks.

```
function greet(name) {
    return "Hello " + name;
}
```

Q20: What is the difference between `null` and `undefined`?

- `undefined`: Variable declared but not assigned a value
- `null`: Intentional absence of value (assigned by programmer)

Q21: What are arrays in JavaScript? Arrays store multiple values in a single variable.

```
let fruits = ["apple", "banana", "orange"];
```

Q22: What are objects in JavaScript? Objects store data in key-value pairs.

```
let person = {
    name: "John",
    age: 25
};
```

Q23: What is the DOM? DOM (Document Object Model) is a programming interface that represents HTML documents as a tree structure, allowing JavaScript to manipulate page content.

Q24: How do you select elements in JavaScript?

```
document.getElementById("id")
document.getElementsByClassName("class")
document.querySelector(".class")
document.querySelectorAll("p")
```

Node.js Questions

Q25: What is Node.js? Node.js is a JavaScript runtime environment that allows you to run JavaScript on the server-side (outside the browser). It's built on Chrome's V8 JavaScript engine.

Q26: Why use Node.js?

- Fast and scalable
- Uses JavaScript for both frontend and backend
- Large package ecosystem (npm)
- Non-blocking I/O operations

Q27: What is npm? npm (Node Package Manager) is the default package manager for Node.js. It helps install, share, and manage dependencies in projects.

Q28: What is a module in Node.js? Modules are reusable blocks of code. Node.js has built-in modules (like `fs`, `http`) and you can create custom modules.

```
const fs = require('fs'); // built-in module
```

Q29: What is `require()` in Node.js? `require()` is used to import modules, JSON files, or local files in Node.js.

Q30: What is the difference between Node.js and JavaScript?

- JavaScript is a programming language
- Node.js is a runtime environment that executes JavaScript outside the browser

Q31: What is Express.js? Express.js is a minimal and flexible Node.js web application framework that provides features for web and mobile applications.

MVC/Controller Questions

Q32: What is MVC? MVC (Model-View-Controller) is a design pattern that separates application into three components:

- **Model**: Manages data and business logic
- **View**: Handles display and UI
- **Controller**: Handles user input and updates Model/View

Q33: What is a controller? A controller handles incoming requests, processes them (often using models), and returns responses. It acts as an intermediary between Model and View.

Q34: Why use MVC pattern?

- Separates concerns
- Makes code organized and maintainable
- Easier to test and debug
- Multiple developers can work simultaneously

General Questions

Q35: What is the difference between frontend and backend?

- **Frontend**: What users see and interact with (HTML, CSS, JavaScript)
- **Backend**: Server-side logic, databases, APIs (Node.js, databases)

Q36: What is an API? API (Application Programming Interface) allows different software applications to communicate. REST APIs use HTTP requests (GET, POST, PUT, DELETE) to perform operations.

Q37: What is JSON? JSON (JavaScript Object Notation) is a lightweight data format for storing and transporting data.

```
{
    "name": "John",
    "age": 25
}
```

Q38: What is asynchronous programming? Code that doesn't block execution while waiting for operations to complete. Uses callbacks, promises, or async/await in JavaScript.

Tips for Tomorrow

1. **Be honest** about being a beginner
2. **Show enthusiasm** to learn
3. If you don't know an answer, say "I haven't worked with that yet, but I'm eager to learn"
4. **Practice** basic code examples tonight
5. **Review** your resume/projects thoroughly
6. **Ask questions** about the role and company

Good luck with your interview! 🎯