**HTML, CSS, and JavaScript**

1. **Define HTML, CSS and JAVASCRIPT.**
   * **HTML:** HyperText Markup Language –It’s the basic building block of a webpage and it structures the content on the web.
   * **CSS:** Cascading Style Sheets – Is used to style and design a web page.
   * **JavaScript:** A programming language used to make web pages interactive.
2. **What are semantic elements?**  
   Elements that clearly describes the meaning of the content inside them (e.g., <article>, <footer>, <nav>).
3. **When do you use the address tag?**  
   To define contact information for a person or business.
4. **When should we use a table tag?**  
   When displaying data in rows and columns.
5. **Can you tell me the difference between the blockquote tag and the q tag?**
   * <blockquote> is used for long quotations and it’s a block-level element(starts on a new line).It has left and right margins by default indenting the text.Used for testimonials
   * <q> is for short, inline quotations. Stays within a paragraph
6. **In HTML name the three types of lists?**
   * Ordered List <ol>
   * Unordered List <ul>
   * Description List <dl>
7. **The div and span tag are non semantic HTML elements. Can you explain the difference between those two elements?** 
   * <div> is a block-level container that is used to group content(Its just a box until you give it a purpose) .It takes up the full with of a page.
   * <span> is an inline container that is used to group small pieces of content for styling or adding javascript.
8. **Explain the purpose of the ‘alt’ attribute in HTML image tags.**

Provides alternative text for an image if the image fails to load.

The alt tag plays a very important role in Search engine Optimization where the search engine use the alt text to understand what your image is about which helps improve your site’s search ranking.

1. **Explain the difference between class and id attributes in HTML and when to use them?**
   * class attribute is used to style multiple elements with CSS or target multiple elements with javascript.You can have multiple classes on one element.
   * Id attribute is used to give an element a unique identity and helps us to target that specific element in CSS or Javascript.Each ID must be different and only used once on a webpage.
2. **What is the difference between inline, inline-block, and block elements?** 
   * **Inline:** Appears on the same line as your content, width/height cannot be set.Best for styling part of a text or inline content.
   * **Inline-block:** Behave like an inline element. but width/height can be set.
   * **Block:** Takes up the full width of the page and starts on a new line. width/height can be set.

**CSS Concepts**

1. **What are the differences between CSS grid layout and CSS flexbox? When would you use each?** 
   * **Grid:** Used for 2D layouts where you can place content with rows + columns.
   * **Flexbox:** For 1D layouts you can either place your content in a row *or* column.  
     Use Grid for full page layouts with rows and columns and Flexbox for when you want to align items in a line, like navbars,cards or to center content easily.
2. **There is animation and transition in CSS. Can you describe the difference?** 
   * **Transition:** Transition animates a change from one style to another smoothly over time instead of the change happening instantly.Needs action from user(hover)
   * **Animation:** Uses keyframes to create movement or effects by changing styles over time.Can run automatically.
3. **What are pseudo elements and pseudo classes give an example of each?** 
   * **Pseudo-class:** Lets you style elements based on their state or position without adding extra HTML(e.g., :hover,:nth-child(2))
   * **Pseudo-element:** Is used to style specific parts of an element or insert content without directly changing the HTML (e.g., ::before).
   * They create virtual elements inside or around existing HTML elements.
4. **There is a property called box shadow. Can you tell me the syntax of it?**   
   box-shadow: h-offset v-offset blur-radius spread-radius color;
5. **What is the importance of responsive web design, and how do you implement it**

Makes websites looks good and work well on all devices. Improves user experience Use media queries, fluid grids, and flexible images.

1. **Can you explain CSS specificity and how it works?**  
   Is a set of rules that determines which style is applied to an element when there are more than one CSS rule that targets the same element. Calculated using inline, IDs, classes and pseudo classes,elements and pseudo-elements etc.

built-in rules assign weights to different selectors. By calculating these weights, we can determine which style will be applied.

Inline = 1000

ID = 100

Classes = 10

Elements = 1

1. **. How would you implement a custom font on a website?**   
   Use @font-face or link from Google Fonts.
2. **Explain the difference between static, relative, absolute, and fixed positioning.** 
   * **Static:** Default. Elements follows the normal flow of the document.
   * **Relative:** Offset from its normal position.Moves the element a little from where it normally appears.
   * **Absolute:** Positioned relative to the nearest positioned ancestor.When you use position absolute the element looks for the closest parent element that has a position set to relative and positions itself inside that parent.
   * if no parent have a position set it will position itself relative to the whole page
   * **Fixed:** Positioned relative to the viewport. Stays in the same place even when scrolling.
   * **Sticky:** Scrolls with the page to a certain point then sticks in place.
3. **Which selector can be used to apply a style to every element on a page?**

The universal selector \*

1. **Can you mention at least three css units?**
   * px, em, %,vw,vh

**JavaScript Concepts**

1. **Name at least 4 data types that exist in JavaScript?**
   * String, Number, Boolean, Object,Arrays
2. **How do you define variables in Javascript?**  
   Use let, const, or var
3. **Can you differentiate between var, let and const?**
   * var: Function-scoped,you can access it anywhere inside the function
   * let: Block-scoped, and only works inside the block where you create it like inside a function or an if statement.Values can be reassigned
   * const: Block-scoped, cannot be reassigned
4. **How do you store names of 5 students in a single variable?**  
   Use an array: let students = ["A", "B", "C", "D", "E"];
5. **What are the differences between null and undefined in JavaScript?**
   * null: a Variable has been given a value ,but that value means nothing or empty.
   * undefined: Variable has been declared but hasn’t been given a value yet
6. **What is the difference between jQuery and Javascript?**
   * jQuery is a library built on JavaScript that simplifies DOM manipulation.
7. **.What are functions in Javascript?**  
   Reusable blocks of code that perform a task.
8. **The user inputs their age and I save it in a variable. Do I use const, let or var?**   
   Use let (value can change)
9. **Describe the ‘addEventListener’ method in JavaScript.**  
   used to Attach an event handler to an element and it’s a way to tell a webpage to do something when you click or do other actions on a part of the page.  
   element.addEventListener("click", function)
10. **.What does DOM stand for?**  
    Document Object Model