PSEUDO CLASS AND ELEMENTS

1. What is a Pseudo-Class in CSS?

A pseudo-class is used to define a special state of an element — like when a user hovers over a button, or when a link has been visited.

It targets elements based on their state or user interaction, not by their name or class.

Examples:

- :active — when an element is being clicked
- :focus — when an element (like an input) is selected
- :visited — for links already visited
- :nth-child() — selects elements based on position

2. What is a Pseudo-Element in CSS?

- A pseudo-element is used to style specific parts of an element's content — for example, the first letter, first line, or adding content before/after an element.
- It acts as if you're creating a new sub-element inside the selected element.

Examples:

- ::before — insert content before an element
- ::after — insert content after an element
- ::first-line — style the first line of text
- ::selection — style the text selected by the user.

3. Difference Between Pseudo-Class and Pseudo-Element?

PSEUDO CLASS :	PSEUDO ELEMENT
Targets an element's state or behavior	Targets a part of an element's content
Uses one colon :	Uses two colons ::
a:hover → styles when hovered	p::first-letter → styles first letter
Interaction and state	Content styling and decoration

4. **Syntax of Pseudo-Classes and Pseudo-Elements :**

    Pseudo-Class Syntax :

selector:pseudo-class {

 property: value;

}

    Pseudo-Element Syntax :

selector::pseudo-element {

 property: value;

}

5. **Usage of Pseudo Classes and Pseudo Elements ?**

Pseudo class Usages:

- To make webpages **interactive** (e.g., hover effects on buttons/links)
- To **style forms** based on user input or validation
- To **control layout** using element positions (first, last, nth)
- To **simplify selectors** without writing extra HTML

Pseudo Element Usages :

- To **add visual elements** like icons, quotes, or symbols
- To **style parts of text** (e.g., first letter or line)
- To **add design details** without cluttering your HTML
- To **create decorative effects** using only CSS.
- To First letter **specific styles.**

6. **When We Use It in a Webpage :**

    I. **Psuedo Class:**

- You want to **add hover effects** for buttons or links.
- You need to **change styles dynamically** depending on user actions.

- You want to **target specific elements** based on their position (first, last, nth).

II.   Pseudo Element :

- You want to **decorate parts of text** (like first letter).
- You want to **add content without HTML tags** (using ::before, ::after).
- You need **special effects** like custom highlight.

7. Pseudo class and element list out the webpages in CSS?

PSEUDO CLASSES WEBPAGES :

Type	Examples
User action	:hover, :focus, :active, :visited
Structural	:first-child, :nth-child(), :empty
Form state	:checked, :disabled, :valid, :invalid
Logical	:not(), :is(), :where(), :has()
Document level	:root, :lang()

POSITIONS

1. What is Position in CSS?

 In CSS, the **position property** is used to **control how an element is placed** on a webpage — meaning, **where it appears** relative to the page, the browser window, or other elements.

It defines **how the browser calculates the location** of an element using top, right, bottom, and left properties.

2. In CSS what is the position absolute , relative , sticky , fixed ?

Position: relative :

- The element is positioned relative to its original place in the normal layout.
- You can move it using top, right, bottom, or left — but the space it originally occupied remains.

Position:absolute :

- The element is removed from the normal document flow.
- It's positioned relative to its nearest positioned ancestor (the nearest parent with position: relative, absolute, or fixed).

Position:fixed :

- The element is fixed to the browser window (viewport).
- It does not move even when the page is scrolled.
- Always stays in the same place on the screen.

Position:sticky :

- The element acts like relative until a certain scroll position.
- Once it reaches that position, it "sticks" to the screen like fixed.

3. Difference b/w the position absolute , relative , sticky , fixed in CSS?

Position Absolute : Moves element relative to its original position. Fine-tuning layout (slight moves).

Position Relative : Positions element relative to its nearest positioned ancestor. Toottips , popups , overlays.

Position Sticky : Acts like relative until it reaches a scroll position, then becomes fixed. Sticky headers , ads or sections.

Position Fixed : Positions element relative to the browser window (viewport). Sticky navbars , floating buttons.

4. **What is z-index in CSS?**

The z-index property controls the stacking order (front-to-back position) of elements on a webpage.

Why do we use z-index ?

We use z-index to decide which element should appear on top when two or more elements overlap. Without it, elements stack in the order they appear in the HTML.

Where do we use z-index?

- When designing pop-ups, modals, or tooltips
- To bring a navbar or menu above other elements
- To layer images, text, or banners properly
- For animation layers or hover effects
- For overlapping layouts using position: absolute, relative, or fixed