

Alright 🤞 here are **very long, clear, exam-oriented answers** for all the CSS questions. These are perfect for **10-15 mark answers** (LPU / MCA style).

1. What are the different ways you could integrate CSS into your HTML page?

CSS (Cascading Style Sheets) can be integrated into an HTML document in **three main ways**. Each method has its own use case depending on the size and complexity of the website.

1. Inline CSS

Inline CSS is applied directly inside an HTML element using the style attribute. It affects only that specific element.

Example:

```
<p style="color: blue; font-size: 16px;">This is inline CSS</p>
```

This method is useful for quick styling but is **not recommended** for large projects because it reduces code readability and reusability.

2. Internal CSS

Internal CSS is written inside the <style> tag within the <head> section of an HTML document.

Example:

```
<head>
<style>
  p {
    color: green;
    font-size: 18px;
  }
</style>
</head>
```

This method is suitable for **single-page websites** or when styles are unique to one page.

3. External CSS

External CSS is written in a separate .css file and linked to the HTML file using the <link> tag.

Example:

```
<link rel="stylesheet" href="styles.css">
```

This is the **most recommended method** because it improves maintainability, reusability, and page loading efficiency.

2. What is the difference between the usage of an ID and a Class?

Both **ID** and **Class** are used to apply CSS styles to HTML elements, but they differ in purpose and behavior.

An **ID** is unique and can be applied to **only one element** on a page. It is used when a specific element needs a unique style.

Example:

```
<div id="header"></div>
```

A **Class** can be applied to **multiple elements** and is used when the same style needs to be reused.

Example:

```
<p class="text-style"></p>
```

```
<div class="text-style"></div>
```

Key differences:

- ID is unique; Class is reusable
 - ID uses # selector; Class uses . selector
 - ID has higher CSS specificity than Class
 - IDs are often used for JavaScript interactions
-

3. Elaborate the function of inline CSS with an example

Inline CSS is used to apply styles **directly to a single HTML element** using the style attribute.

Function of Inline CSS:

- Applies style only to one element
- Overrides internal and external CSS due to higher specificity
- Useful for testing, debugging, or small changes

Example:

```
<h1 style="color: red; text-align: center;">  
    Welcome to CSS  
</h1>
```

Advantages:

- Quick and easy to apply
- No need for separate CSS files

Disadvantages:

- Makes HTML messy
- Difficult to maintain

- Not reusable

Inline CSS should be avoided in large-scale applications.

4. What are the different units used in CSS?

CSS supports various units to define sizes, spacing, and positioning. These units are divided into **absolute** and **relative** units.

Absolute Units:

- px (pixels)
- cm (centimeters)
- mm (millimeters)
- in (inches)
- pt (points)
- pc (picas)

Absolute units have fixed values and are less responsive.

Relative Units:

- % – Relative to parent element
- em – Relative to font size of parent
- rem – Relative to root (html) font size
- vw – Relative to viewport width
- vh – Relative to viewport height
- vmin and vmax – Relative to viewport size

Relative units are preferred for **responsive design**.

5. Name all the modules which are used in the current version of CSS

CSS is divided into **modules**, each responsible for a specific functionality. The current version (commonly referred to as CSS3 and beyond) includes several modules.

Some important CSS modules are:

- CSS Selectors
- CSS Box Model
- CSS Backgrounds and Borders
- CSS Text and Fonts
- CSS Color

- CSS Flexbox
- CSS Grid Layout
- CSS Animations
- CSS Transitions
- CSS Transforms
- CSS Media Queries
- CSS Multi-column Layout
- CSS Variables (Custom Properties)

These modules allow independent development and faster evolution of CSS features.

6. What are CSS Selectors?

CSS selectors are patterns used to **select HTML elements** to which styles should be applied.

Types of CSS Selectors:

1. Element Selector

```
p { color: blue; }
```

2. Class Selector

```
.text { font-size: 16px; }
```

3. ID Selector

```
#main { background-color: yellow; }
```

4. Universal Selector

```
* { margin: 0; padding: 0; }
```

5. Attribute Selector

```
input[type="text"] { border: 1px solid black; }
```

6. Pseudo-class Selector

```
a:hover { color: red; }
```

Selectors are essential for controlling how styles are applied.

7. How to align images vertically in a division that spans vertically on the whole webpage?

To align an image vertically in a <div> that spans the full height of the webpage, modern CSS techniques like **Flexbox** are commonly used.

Using Flexbox (Recommended):

```
<div class="container">  
    
</div>  
  
.container {  
  height: 100vh;  
  display: flex;  
  align-items: center;  
  justify-content: center;  
}
```

This method centers the image vertically (and horizontally if needed).

Using Positioning:

```
.container {  
  position: relative;  
  height: 100vh;  
}
```

```
.container img {  
  position: absolute;  
  top: 50%;  
  transform: translateY(-50%);  
}
```

Conclusion:

Flexbox is the **cleanest and most responsive** way to vertically align images.
