

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).

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## 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.

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### 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.

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### 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.

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## 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
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## 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.

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#### 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.

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##### **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**.

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#### 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.

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## 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.

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## 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).

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### **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.

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