

web_tech_15_questions

1. a) Explain the purpose of text formatting tags.
b) Write a html program to get the following output using various text formatting tags.

Article Title (Bold) This is an HTML tutorial where we cover bold text and strong emphasis. Use italicized text or emphasized text to highlight ideas. This is an underlined word in HTML. Old price: \$100, New price: \$80. H₂O represents water, and $x^2 + y^2 = r^2$ is a circle equation. Here is a sample code: `print("Hello, World!")`

A.

Text formatting tags are used in markup languages (like HTML) and document formatting languages (like Markdown, LaTeX) to style and structure text.

HTML Formatting Tags

- `` – Bold
- `` – Strong (bold with semantic importance)
- `<i>` – Italic

- `` – Emphasized (italic with semantic meaning)
- `<u>` – Underline
- `<s>` – Strikethrough
- `<mark>` – Highlighted text
- `<small>` – Smaller text
- `<sup>` – Superscript (e.g., x^2)
- `<sub>` – Subscript (e.g., H_2O)
- `<pre>` – Preformatted text (preserves spaces and line breaks)
- `<code>` – Inline code formatting
- `<blockquote>` – Blockquote for citations
- `<q>` – Inline quotation
- `<abbr>` – Abbreviation (tooltip on hover)
- `<cite>` – Citation for works
- `` – Deleted text (strikethrough)
- `<ins>` – Inserted text (underlined)

```
<!doctype html>
<html>
  <head>
    <title>programs</title>
    <meta charset="utf-8">
  </head>
  <body>
    <b>Article Title</b>
    <p>This is an HTML tutorial where we cover <b>bold
      text</b> and <b>strong emphasis.</b>
    </p>
    <p>Use <i>italicized text </i> or <em>emphasized text</em> to highlight
      ideas. This is an <u>underlined word</u> in HTML.
```

```

    Old price: $100, New price: $80.
    H<sub>2</sub>O represents water, and
    x<sup>2</sup> + y<sup>2</sup> = r<sup>2</sup> is a circle equation.
</p>
<p>
    Here is a sample
    code:<code>print(&quot;Hello, World!&quot;)</code>
</p>

</body>
</html>

```

2. a) Create an HTML page that displays an image using the `` tag. Ensure that:

- ▮ The image is responsive and scales according to different screen sizes.

- ▮ If the image is not available, an alternate text is displayed.

- ▮ When a user hovers over the image, a tooltip appears.

Hint: Use attributes like `src`, `alt`, `title`, and CSS properties like `max-width` and `height`.

b) Audio Tag (`<audio>`) - Custom Audio Player

Question:

Embed an audio file in an HTML page using the `<audio>` tag.

- ▮ The audio file should play automatically when the page loads (without sound).

- ▮ Provide controls for play, pause, and volume.

- ▮ Add a fallback message for browsers that do not support the `<audio>` tag.

Hint: Use attributes like `autoplay`, `muted`, `controls`, and `preload`.

c) Question:

Create a webpage that embeds a video using the `<video>` tag and:

- ▮ Supports multiple formats (MP4, WebM, Ogg) to ensure browser compatibility.

- ▮ Includes controls for play, pause, and fullscreen.

- ▮ Displays a custom thumbnail before playing.

- ▮ Shows an error message if the video format is not supported.

Hint: Use <source> tags inside <video>, and attributes like poster, controls, and fallback text.

A.

```
<!doctype html>
<html>
  <head>
    <title>programs</title>
    <meta charset="utf-8">
    <style>
      .responsive-img {
        max-width: 100%;
        height: auto;
      }
      video{
        width:700px;
        height:500px;
      }
    </style>
  </head>
  <body>
    
    <br><br>
    <audio controls autoplay>
      <source src="example.mp3" type="audio/mp3">
      Your browser does not support the audio tag.
    </audio>
    <br><br>
    <video controls autoplay poster="https://rea.ec.europa.eu/sites/default/files
      <source src="https://cdn.pixabay.com/video/2024/03/18/204565-92469
      Your browser does not support the video tag.
```

```
<a href="https://cdn.pixabay.com/video/2024/03/18/204565-924698132"
</video>

</body>
</html>
```

3.

Compare the three types of CSS (inline, internal, external). Analyze their advantages and disadvantages in different scenarios using suitable example for each.

A.

CSS Type	Advantages	Disadvantages	Best Use Case
Inline CSS	Quick & easy, high specificity	Not reusable, messy code	Small, quick fixes
Internal CSS	Better organization, no extra file	Not reusable, slows down large pages	Single-page styling
External CSS	Reusable, better performance, clean code	Extra file needed, first-time load delay	Large projects, multiple pages

- **Use Inline CSS** only for quick fixes or special cases.
- **Use Internal CSS** for small, single-page projects.
- **Use External CSS** for **scalable, maintainable, and professional web development**.

1 Inline CSS (Inside the Tag)

```
<p style="color: red; font-size: 20px;">Hello, Inline CSS!</p>
```

2 Internal CSS (Inside `<style>` in `<head>`)

```
<head>
  <style>
    p { color: blue; font-size: 18px; }
  </style>
</head>
<body>
  <p>Hello, Internal CSS!</p>
</body>
```

3 External CSS (Linked CSS File)

HTML File:

```
<head>
  <link rel="stylesheet" href="styles.css">
</head>
<body>
  <p>Hello, External CSS!</p>
</body>
```

CSS File (`styles.css`):

```
css
p { color: green; font-size: 22px; }
```

4. Analyze the role of CSS selectors like Class and ID selectors in targeting elements for styling. Give examples to demonstrate Class and ID selectors.

A.

1 Class Selector (.) → Used for Multiple Elements

- Targets **multiple elements** with the same class name.

Example:

```
<head>
  <style>
    .highlight { color: blue; font-weight: bold; }
  </style>
</head>
<body>
  <p class="highlight">This is a class-styled paragraph.</p>
  <p class="highlight">Another paragraph with the same class.</p>
</body>
```


2 ID Selector (#) → Used for a Unique Element

- Targets **only one unique element** per page.

Example:

```
<head>
  <style>
    #unique { color: red; font-size: 20px; }
  </style>
</head>
<body>
  <p id="unique">This is an ID-styled paragraph.</p>
</body>
```

◆ Key Differences

Selector	Symbol	Targets	Reusability	Specificity
Class		Multiple elements	Reusable	Lower

ID	#	Only one element	Unique	Higher
----	---	------------------	--------	--------

5. Explain the importance of responsive web design. How do CSS features like media queries contribute to creating adaptable layouts?

Importance of Responsive Web Design

Responsive Web Design (RWD) ensures websites **adapt to different screen sizes** (mobile, tablet, desktop). This improves **user experience, accessibility, and SEO**.

Role of CSS in Responsive Design

Media Queries allow styles to change based on screen size, resolution, or device type.

Media Queries Syntax Example

```
/* For screens smaller than 600px (Mobile) */
@media (max-width: 600px) {
  body { background-color: lightblue; }
}

/* For screens larger than 1024px (Desktop) */
@media (min-width: 1024px) {
  body { background-color: lightgreen; }
}
```

How Media Queries Help

- ✓ Different layouts for different screens
- ✓ Optimizes readability & usability
- ✓ Improves mobile-first design

6. Discuss the importance of box model properties such as margin, border, padding, and width in layout design.

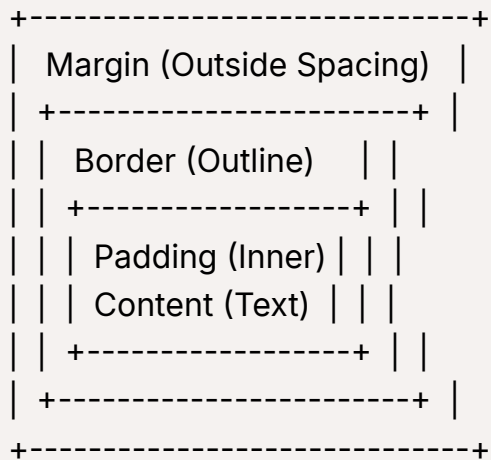
A.

Importance of CSS Box Model Properties

The **CSS Box Model** defines how elements are structured in a layout using:

- ✓ **Margin** – Space **outside** the element.
- ✓ **Border** – The element's **outline**.
- ✓ **Padding** – Space **inside** between content & border.
- ✓ **Width** – The element's **content width**.

Box Model Structure



Example with CSS

```
.box {
  width: 200px;
  padding: 20px;
  border: 5px solid black;
  margin: 30px;
}
```

```
<div class="box">This is a box model example.</div>
```

How These Properties Impact Layout

Property	Function
Margin	Creates spacing between elements.
Border	Defines the element's boundary & visibility.
Padding	Prevents content from touching the border.
Width	Sets the size of the content area.

7. Use appropriate html list tags to display the following output.

A.

```
<!doctype html>
<html>
  <head>
    <meta charset="utf-8">
    <title>programs</title>
  </head>
  <body>
    <h1>Steps to Prepare a Sandwich</h1>
    <ol>
      <li>Gather Ingredients
        <ol type="a">
          <li>Bread</li>
          <li>Butter</li>
          <li>Vegetables(Tomato, Lettuce, Cucumber)</li>
        </ol>
      </li>
      <li>Spread butter on the bread</li>
      <li>Add vegetables</li>
      <li>Close the sandwich</li>
      <li>Serve and enjoy</li>
    </ol>
    <h1>Daily To-Do List</h1>
    <ul>
```

```
<li>Morning Tasks
  <ul>
    <li>Wake up</li>
    <li>Exercise</li>
    <li>Have Breakfast</li>
  </ul></li>
  <li>Work Tasks
    <ul>
      <li>Attend meeting</li>
      <li>Complete project report</li>
    </ul>
  </li>
  <li>Evening Tasks
    <ul>
      <li>Read a book</li>
      <li>Go for a walk</li>
    </ul>
  </li>
</ul>
<h2>Glossary</h2>
HTML<br>CSS<br>JavaScript
```

8. **Create an HTML webpage to demonstrate the usage of the target attribute in hyperlinks. Your page should include:**
 1. **A text link that opens "<https://www.example.com>" in the same tab (_self).**
 2. **A text link that opens "<https://www.google.com>" in a new tab (_blank).**
 3. **A text link that opens "<https://www.wikipedia.org>" in a new window (_blank).**

4. A text link that loads "<https://www.youtube.com>" inside an iframe on the same page (use a named target).

A.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Target Attribute in Hyperlinks</title>
</head>
<body>
  <h2>Demonstrating the target Attribute in Links</h2>

  <!-- Opens in the same tab →
  <p><a href="https://www.example.com" target="_self">Open Example.com in

  <!-- Opens in a new tab →
  <p><a href="https://www.google.com" target="_blank">Open Google in a new

  <!-- Opens in a new window (same as _blank, but depends on browser setting
  <p><a href="https://www.wikipedia.org" target="_blank">Open Wikipedia in a

  <!-- Opens YouTube inside an iframe using a named target →
  <p><a href="" target="videoFrame">Load YouTube inside the iframe</a></p>

  <iframe width="560" height="315"
    src="https://www.youtube.com/embed/gRnuFC4Ualw?si=Ql5BpN4pI3Xc6ta6"
    title="YouTube video player" frameborder="0" allow="accelerometer; autoplay
</body>
</html>
```

9.

HTML code for the Sales Data Table

A.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>tabless</title>
</head>
<body>

  <h2>Sales Data Table</h2>

  <table border="1" cellspacing="0" cellpadding="5">
    <tr>
      <th rowspan="2">Product</th>
      <th colspan="3">January</th>
      <th colspan="3">February</th>
      <th rowspan="2">Total Sales</th>
    </tr>
    <tr>
      <th>Week 1</th>
      <th>Week 2</th>
      <th>Week 3</th>
      <th>Week 1</th>
      <th>Week 2</th>
      <th>Week 3</th>
    </tr>
    <tr>
      <td rowspan="2">Laptop</td>
      <td>150</td>
      <td>200</td>
      <td>180</td>
      <td>220</td>
```

```

        <td>250</td>
        <td>230</td>
        <td rowspan="2">1230</td>
</tr>
<tr>
    <td>130</td>
    <td>190</td>
    <td>170</td>
    <td>210</td>
    <td>240</td>
    <td>220</td>
</tr>
<tr>
    <td>Tablet</td>
    <td colspan=2>140</td>
    <td>160</td>
    <td>180</td>
    <td>200</td>
    <td>190</td>
    <td>870</td>
</tr>
<tr>
    <td rowspan="2">Smartphone</td>
    <td>300</td>
    <td>320</td>
    <td>310</td>
    <td>330</td>
    <td>350</td>
    <td>340</td>
    <td rowspan="2">1950</td>
</tr>
<tr>
    <td>280</td>
    <td>310</td>
    <td>290</td>
    <td>320</td>

```

```

        <td>340</td>
        <td>330</td>
    </tr>
    <tr>
        <td colspan="7" align="center"><strong>Grand Total</strong></td>
        <td><strong>4050</strong></td>
    </tr>
</table>

</body>
</html>

```

10. Registration Form

A.

```

<!DOCTYPE html>
<html>
  <head>
    <title>Registration Form</title>
    <meta charset='utf-8'>
    <style>
      section {
        border: 1px solid black;
        padding: 10px;
        margin-bottom: 10px;
      }
    </style>
  </head>
  <body>
    <h1>Registration Form</h1>
    <form>
      <section>
        <h3>Personal Information</h3>
        <label for="first_name">First Name:</label>
        <input type="text" name="first_name"><br>

```

```
<label for="last_name">Last Name:</label>
<input type="text" name="last_name"><br>

<label>Gender:</label>
<input type="radio" name="gender" value="male"> Male
<input type="radio" name="gender" value="female"> Female
<input type="radio" name="gender" value="other"> Other<br>

<label>Date of Birth:</label>
<input type="date"><br>

<label>Upload Photo:</label>
<input type="file"><br>
</section>

<section>
  <h3>Contact Details</h3>
  <label>Email:</label>
  <input type="email"><br>

  <label>Phone Number:</label>
  <input type="tel"><br>

  <label>Address:</label>
  <textarea rows="3" cols="30"></textarea><br>

  <label>Country:</label>
  <select>
    <option>-Select-</option>
    <option>India</option>
    <option>Bhutan</option>
    <option>Russia</option>
  </select>
</section>
```



```
<section>
  <h3>Account Preferences</h3>
  <label>Username:</label>
  <input type="text"><br>

  <label>Password:</label>
  <input type="password"><br>

  <label>Confirm Password:</label>
  <input type="password"><br>

  <h4>Subscription Preferences:</h4>
  <input type="checkbox"> Subscribe to Newsletter<br>
  <input type="checkbox"> Receive Offers<br>
</section>

<section>
  <h3>Other Information</h3>
  <label>Favorite Color:</label>
  <input type="color"><br>

  <label>Personal Website:</label>
  <input type="url"><br>

  <label>Rate Us:</label>
  <input type="range" min="1" max="10"><br>

  <label>Preferred Contact Time:</label>
  <input type="time"><br>
</section>

<input type="submit" value="Register">
<input type="reset" value="Reset">
</form>
```

```
</body>  
</html>
```

11. Design a table

A.

```
<!doctype html>  
<html>  
  <head>  
    <title>table</title>  
    <meta charset="utf-8">  
    <style>  
      table, th, tr, td{  
        border: 1px solid black;  
      }  
    </style>  
  </head>  
  <body>  
    <h2>Student Mark Table</h2>  
    <table cellspacing="5px" cellpadding="5px">  
      <tr>  
        <th>Student Name</th>  
        <th>Subject</th>  
        <th>Marks</th>  
      </tr>  
      <tr>  
        <td>Alice</td>  
        <td>Math</td>  
        <td>85</td>  
      </tr>  
      <tr>  
        <td>Bob</td>  
        <td>Science</td>  
        <td>90</td>  
      </tr>
```

```

    <tr>
      <td>Charlie</td>
      <td>English</td>
      <td>88</td>
    </tr>
  </table>
</body>
</html>

```

13. registration form

A.

```

<!doctype html>
<head>
  <title>basic registration form</title>
  <meta charset="utf-8">
  <style>
    body {
      align-items: center;
      padding: 20px;
      width: 70%;
    }
    h2 {
      text-align: center;
    }
    label {
      display: block;
      margin-top: 10px;
      font-weight: bold;
    }

    input, select, textarea {
      width: 100%;
      padding: 8px;
      margin-top: 5px;
    }
  </style>

```

```

border: 1px solid #ccc;
border-radius: 5px;
}

button {
margin-top: 15px;
padding: 10px;
width: 48%;
border: none;
border-radius: 5px;
cursor: pointer;
}

button:hover {
opacity: 0.8;
}

</style>
</head>
<body>
<h2>Basic Registration Form</h2>
<form>
<label>Name: </label>
<input type="text"><br>
<label>Email: </label>
<input type="email"><br>
<label>Age: </label>
<input type="number"><br>
<label for="gender">Gender: </label>
<select name="gender" id="gender">
<option value="male">Male</option>
<option value="female">Female</option>
<option value="other">Other</option>
</select><br>
<label>Message: </label>
<textarea rows="3" cols="30"></textarea><br>

```

```
<button>Submit</button>
<button>Reset</button><br>
</form>
</body>
<body>
```

14.

differentiation between `<iframe>` , `<form>` , `<link>` , and `<a>` tags in HTML

A.

1. `<iframe>` (Inline Frame)

- Used to embed another webpage within the current page.
- Can be used for embedding maps, videos, or external websites.

 **Example:**

```
<iframe src="https://www.example.com" width="400" height="300"></ifram
e>
```

2. `<form>` (Form Tag)

- Used to create an input form for user data submission.
- Usually paired with `<input>` , `<textarea>` , `<button>` , etc.

 **Example:**

```
<form action="submit.php" method="post">
  <label for="name">Name:</label>
  <input type="text" id="name" name="name">
  <button type="submit">Submit</button>
</form>
```

3. `<link>` (Linking External Resources)

- Used inside `<head>` to link external CSS files, icons, etc.
- Does **not** create a clickable link (unlike `<a>`).

✓ **Example:**

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

📌 4. `<a>` (Anchor / Hyperlink)

- Creates clickable links to navigate to other pages or resources.

✓ **Example:**

```
<a href="https://www.google.com" target="_blank">Visit Google</a>
```

🔥 Key Differences:

Tag	Purpose
<code><iframe></code>	Embeds external content (websites, videos, maps, etc.) inside the page.
<code><form></code>	Collects user input and sends it to a server.
<code><link></code>	Links external resources like CSS or icons.
<code><a></code>	Creates a clickable hyperlink to another page or resource.

15.

demonstration of CSS link properties, background properties, and animation properties

A.

◆ 1. CSS Link Properties

Used to style hyperlinks (`<a>` tags) in different states like normal, hover, active, and visited.

✓ **Example:**

```
<!DOCTYPE html>
<html lang="en">
<head>
  <style>
    a {
      text-decoration: none;
      color: blue;
      font-size: 18px;
    }

    a:hover {
      color: red;
    }

    a:visited {
      color: purple;
    }

    a:active {
      color: green;
    }
  </style>
</head>
<body>
  <a href="https://www.example.com">Visit Example</a>
</body>
</html>
```

◆ 2. CSS Background Properties

Used to set background color, images, and effects.

✅ Example:

```

<!DOCTYPE html>
<html lang="en">
<head>
  <style>
    .background-demo {
      width: 500px;
      height: 300px;
      background-color: lightblue;
      background-image: url('https://via.placeholder.com/150');
      background-size: cover;
      background-repeat: no-repeat;
      background-position: center;
      padding: 20px;
      color: white;
    }
  </style>
</head>
<body>
  <div class="background-demo">
    This is a div with a background image.
  </div>
</body>
</html>

```

◆ 3. CSS Animation Properties

Used to create smooth transitions and effects.

✅ **Example:**

```

<!DOCTYPE html>
<html lang="en">
<head>
  <style>
    @keyframes bounce {

```



```

    0% { transform: translateY(0); }
    50% { transform: translateY(-20px); }
    100% { transform: translateY(0); }
  }

  .animated-box {
    width: 100px;
    height: 100px;
    background-color: tomato;
    text-align: center;
    line-height: 100px;
    font-weight: bold;
    color: white;
    animation: bounce 1s infinite;
  }
</style>
</head>
<body>
  <div class="animated-box">Bounce</div>
</body>
</html>

```

🔥 Summary of Properties

Category	Properties Used
Link Properties	text-decoration , color , :hover , :visited , :active
Background	background-color , background-image , background-size , background-repeat , background-position
Animation	@keyframes , animation , transform